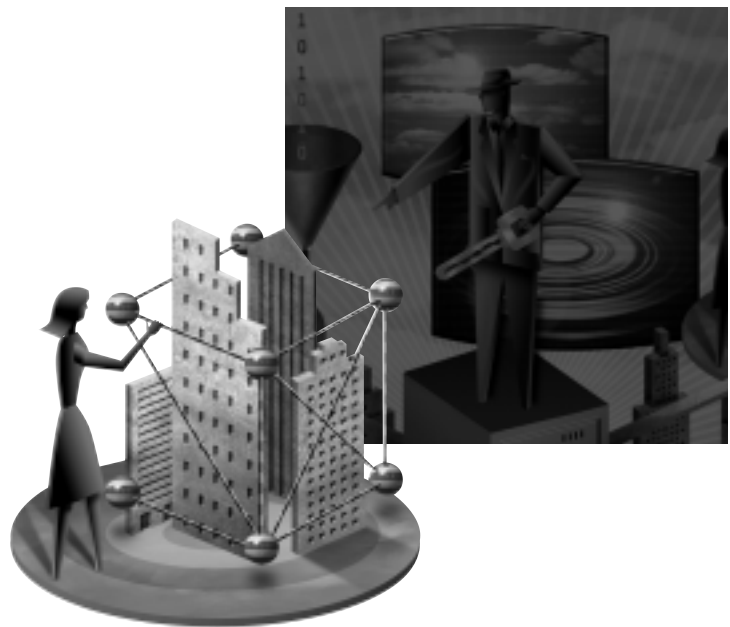


**Corporate
YAHOO!**

CITRIX®

Citrix NFuse and Corporate Yahoo! White Paper



- Section 1 Overview**
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With Citrix NFuse, applications are easily integrated with Corporate Yahoo!

The screenshot shows a web browser window titled "Corporate Yahoo - Capital Investment for user Bob - Microsoft Internet Explorer". The page features a navigation menu on the left with options like Home, Forms, Departments, Policies, and Services. The main content area is divided into several sections:

- Welcome, Bob!** with tabs for My Capital, Sales Information, and HR Information.
- Intranet Search** with a search box and "Employee Search" button.
- Capital Investment News** with sections for External Press Releases and Internal News.
- WebEx Meeting Center** with links to Start a Meeting, Join a Meeting, and Enter your WebEx Office.
- My CRM** with a table of Active Accounts:

| Acct. # | Value (000) | Change (000) |
|---------|-------------|--------------|
| 10222 | \$1,291 | \$200 |
| 10251 | \$2,142 | \$1,125 |
| 10272 | \$1,647 | \$510 |
| 10724 | \$4,254 | \$1,191 |
| 10777 | \$2,956 | \$949 |

- Portfolios** with a table of Quotes:

| | | |
|--------|----------|------|
| DIA | 10735.57 | 0.00 |
| NASDAQ | 3756.37 | 0.00 |
| NYSE | 413.00 | 0.00 |

- Citrix® NFuse™** - Jun 7 8:07am ET, showing a grid of applications for user "bamith": Outlook 2000, Word 2000, Excel 2000, Powerpoint 2000, Notepad, and Calculator.
- My Inbox** with a list of emails:

| | | |
|---------------------------|-----------------------------|--------------|
| ! @ Melinda O'Shaughnessy | RE: Legal documents | Fri 6/9/2000 |
| @ George Clooney | RE: Acting Position | Fri 6/9/2000 |
| @ Fred Meyer | Large Corporate Yahoo! sale | Fri 6/9/2000 |
| ! @ Al Osterman | RE: Purchase Order | Thu 6/8/2000 |
| ! @ Melinda O'Shaughnessy | Legal documents | Wed 6/7/2000 |

- Headlines** - Jun 7 8:07am ET.

A callout box on the right side of the screenshot contains the text: "Access interactive applications with the Citrix NFuse module."

Overview

Application Access in the Digital Economy

In today's fast-paced global marketplace, the ability to provide a work force with access to the right applications and data — whenever and wherever they are needed — is indispensable for maintaining a competitive edge. However, the complexity and cost of delivering business-critical applications to today's worker at the right times and in the right places have become overwhelming. We have seen the introduction of numerous new computing devices, from powerful servers, desktops and notebooks to Java™-based network computers, Windows®-based terminals and handheld information appliances. And workers are now spread around the world in branch offices, homes, hotels, customer sites, accessing applications via network connections. Currently there are more than 140 million PCs, workstations and servers installed on networks worldwide. Further, online usage has mushroomed, with the Internet community increasing from 15.3 million to 68.6 million “Netizens” in the last two years.

Rise of the Corporate Portal

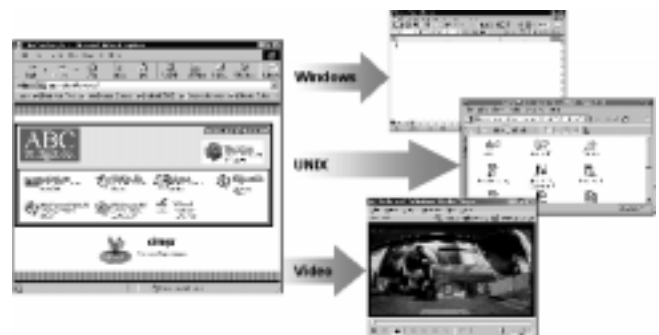
With this mass migration to the Web, corporate portals, which are already playing an important part as the source for internal information, are poised for a larger role — enhancing the traditional desktop. Analogous to familiar Internet portals that provide a gateway to Web content, the browser-based corporate portal aggregates company applications and data, and offers management tools for organizing and using them more efficiently. In some companies, the corporate portal has become the one place employees and business partners can go to access a myriad of business applications, calendars, e-mail and other discrete resources.

Adoption of portals can deliver concrete business benefits: in particular, increased worker productivity and cost savings. By providing easy access to applications, data, reports, and search tools through a central gateway, the corporate portal helps users become more efficient. Because this access is tailored to the employee or group based on job requirements, level, position or company policy, users are not overwhelmed by irrelevant information. In addition to raising efficiency, portal implementations can save money by replacing expensive, support-hungry desktops with a Web browser, which can run on virtually any platform.

Enabling Browser-based Application Access

A key requirement for corporate portals is the ability to publish applications into a Web browser. Currently, few applications have been developed specifically for Web-based delivery, and although it is possible to use existing applications by re-engineering them for Web publication using HTML, scripting, Java and other proprietary means, this approach is time-consuming and expensive, and may delay portal implementation. Likewise, these implementations may have reduced interactivity or may not be feasible because the “down load and run” model is too resource-intensive.

Publish applications via the Web

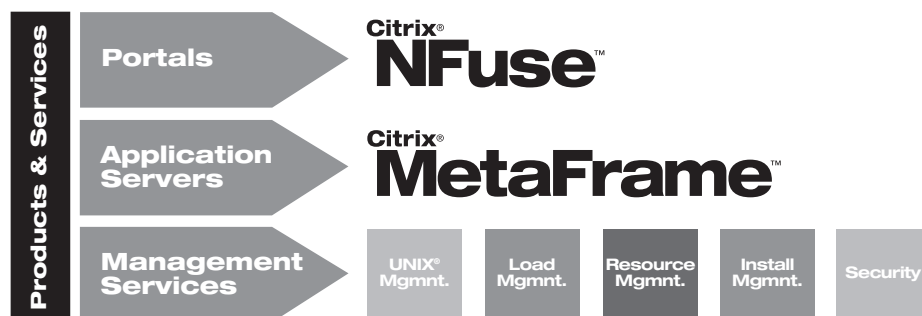


Yahoo! and Citrix: A winning combination

A new product from Citrix called NFuse™ allows organizations and application service providers (ASPs) to publish unmodified interactive applications used by businesses today to a standard browser. Corporate Yahoo!® is an enterprise portal offering that allows companies to securely aggregate corporate content and applications (including NFuse) with compelling Yahoo! content and services using the familiar, easy-to-use My Yahoo! platform. And just as Corporate Yahoo! provides personalized, role-based delivery of content, NFuse also personalizes application delivery based on a user's identity. Citrix NFuse works in conjunction with Citrix MetaFrame™ application servers to improve Yahoo! portal implementations by leveraging the computing environment that already exists and reducing time-to-market for portal implementations. With this solution customers can:

- Leverage the very same line-of-business applications already in use!
- Eliminate application rewrites
- Create a seamless Web environment for users
- Make the portal the “only” place users need to go
- And yes, this is easy too!

It all stacks up — application delivery through a winning combination.



Citrix NFuse is designed to work with products like Corporate Yahoo! NFuse complements the Corporate Yahoo! modules for company news, external Yahoo! content, Web-based applications and others that enable easy design and deployment of corporate portals.

An NFuse “module” permits the integration of corporate applications into this intranet environment. Just as Corporate Yahoo! PortalBuilder is a framework to aggregate Web content supplied by different sources, NFuse aggregates business critical applications into the portal.

“...NFuse technology eliminates the biggest pain point in getting Windows applications ready for browser-based deployment. By ‘publishing’ the application’s data to HTML pages, NFuse makes the interface to all of those homebrew client/server Windows apps simple, and eliminates the huge desktop PC driver maintenance problem.”

— Zona Research, Feb. 2000

The combination of Citrix NFuse and Corporate Yahoo! makes it possible for users of this portal to access virtually any kind of data or application from a single point. With the flexibility and personalization control of both the Yahoo! PortalBuilder software and the NFuse component, user-specific information and applications become a reality. As with other Web implementations using NFuse, a MetaFrame infrastructure delivers application hosting, publishing and user management with access from virtually any device.

Application Server Computing

Application server computing offers a high-performance, reliable, secure and manageable way of delivering business-critical applications to end-user devices.

Under this computing model, applications are deployed, managed, supported and executed 100% on a server. Application server computing delivers an architecture that enables robust, secure access to virtually any application across any network to virtually any type of client, while delivering bottom-line business benefits: reduced cost of ownership and increased manageability through centralized application deployment and management.

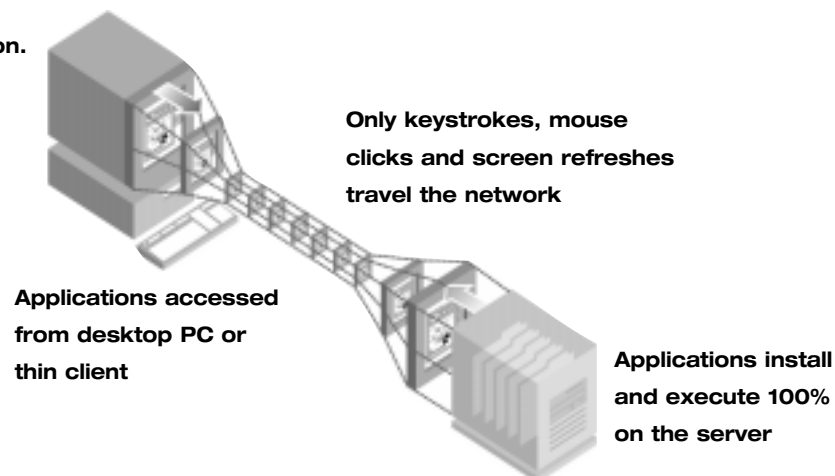
Citrix MetaFrame software is enabling organizations to achieve “Digital Independence”™ from the cost and complexity of traditional computing by transforming the way they deploy, manage and access applications with an application server computing approach. MetaFrame extends the functionality of Microsoft Windows NT Server 4.0, Terminal Server Edition, Microsoft Windows 2000 Servers and Sun Solaris™ Servers by providing enterprise management and Web enablement of applications, and access from any location or device, over any network connection — wireless to Web.

Application Server Computing Compared to Network Computing and Traditional Client/Server Computing

While all three computing models have a valid role in today’s enterprises, it’s important to note the differences between them. In the traditional client/server architecture, processing is centered on local execution using fat, powerful hardware components. In the network computing architecture as defined by Sun, Oracle, Netscape, IBM and Apple, components are dynamically downloaded from the network into the client device for execution by the client. But with the Citrix application server computing approach, users are able to access business-critical applications — including the latest 32-bit Windows-based, UNIX® and Java applications — without requiring them to be downloaded to the client. This approach also provides considerable total cost of application ownership savings, since these applications are centrally managed and can be accessed by users without having to rewrite them.

Basically, the application server computing approach delivers all the benefits of both host computing and personal computing.

Citrix ICA and MetaFrame Application Serving in action.



Benefits of Application Server Software

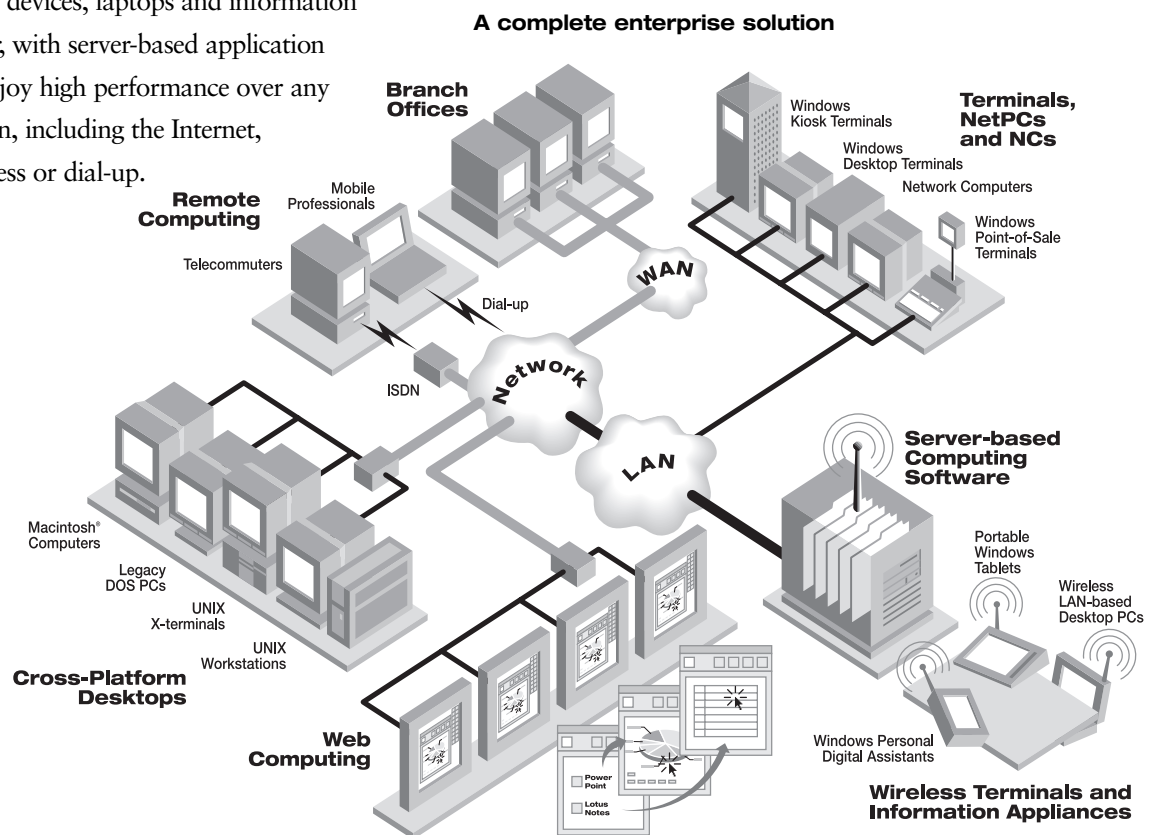
Citrix MetaFrame application server software offers many key benefits:

Enterprise-class management: centralizing application management and deployment on a server or server “farm” enables greater administrative efficiency, better utilization of IT staff resources, faster time-to-value for new and updated software, and reduced support costs.

Flexible application access: application server computing keeps all processing on the server and delivers only the user interface to the client, turning any device into a “thin” client whose existing memory, features and brand become irrelevant. With this model, applications can be accessed from virtually any device, from older PCs, Macintosh computers and UNIX workstations to the latest handheld devices, laptops and information appliances. Further, with server-based application execution, users enjoy high performance over any network connection, including the Internet, WAN, LAN, wireless or dial-up.

Seamless systems integration: enterprises can implement application server computing without changing their existing infrastructures. Citrix technology enables organizations to deliver Windows, UNIX and Java applications to existing devices over existing networks.

Web application publishing: NFuse, a recent enhancement to Citrix application server technology, offers organizations the ability to run any application on the Web — instantly. This capability, together with the other benefits of a server-based model, gives enterprises a complete solution for transitioning to Web application access through an intranet or a corporate portal.



Webability for Current MetaFrame Customers

Current MetaFrame users are already enjoying the benefits of centralized application management and deployment. These customers can now benefit from the joint solution of NFuse and Corporate Yahoo! and extend their existing MetaFrame environment to the Web, providing users with personalized content and business-critical applications simultaneously. Companies can easily build Corporate Yahoo! portals, enabling users to access information and applications from a single point.

To make the integration effort easy for existing MetaFrame users, Citrix has created a special NFuse module for customers to download. This customized module for Corporate Yahoo! allows portal configurations to include existing MetaFrame-based applications quickly, easily and without interruption to existing infrastructure.

Citrix NFuse is the answer to many of the deployment and management issues that IT managers face with traditional Web application integration. NFuse helps solve these issues by further extending two features that have become an integral part of MetaFrame: Citrix Application Launching and Embedding and Citrix Program Neighborhood™.

Application Launching and Embedding allows full-function Windows and UNIX applications to be launched from, or embedded into, HTML Web pages without rewriting a single line of code. With this feature, administrators have been able to instantly integrate Windows-based applications into a user's desktop and across the Web, saving companies time and money. The launched and embedded application looks, feels and performs as if it were running locally, even though it is executing on the server.

Program Neighborhood introduced a metaphor for user application access that replaced Remote Application Manager to deliver access to centrally deployed applications. With Program Neighborhood, server-based applications are simply pushed to the Program Neighborhood client.

With NFuse, now an integral part of MetaFrame, these features are further extended to form an application portal product that can integrate and publish interactive applications into any standard Web browser. NFuse provides customers three main benefits:

- **Integration:** Customers can integrate and publish interactive applications into any standard Web browser. 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.
- **Personalization:** Customers can customize the selection of applications a user receives. This gives administrators the freedom to personalize the browser and content around the applications. Customers can build corporate intranets that provide links to local news, corporate information and client Websites, all while delivering applications to the users who need them.
- **Control:** Administrators maintain the same high degree of enterprise-class command and control while deploying applications over the Web.

These three important features in NFuse are perfectly suited to help leverage Corporate Yahoo! in corporations. Customers currently enjoying the benefits of managed applications through Citrix MetaFrame can further extend this capability to maintain applications and users' desktops easily on the Web, saving time and money!

Citrix NFuse Application Portal Technology

Citrix NFuse application portal technology gives companies the power to integrate and publish interactive applications into any standard Web browser.

With NFuse from Citrix, administrators and ASPs can enhance users' computing experience with the power to customize which applications they receive. Customers can even personalize the browser and content around the applications for each user, if they choose. Plus, administrators and ASPs retain the ability to manage applications using all the powerful capabilities of Citrix application server software.

NFuse Features

Web interface to Citrix Program Neighborhood.

Now users of almost any ICA Client can benefit from the simplified application access provided by Citrix Program Neighborhood.

Dynamic user interface creation. NFuse lets customers create a single "template" Web script that Web servers can dynamically customize for each user.

Complete administrative control over application deployment. NFuse's use of Web server-side scripting enables configuration of all ICA Client options in server-side scripts and ICA files.

Integration with popular Web technologies such as XML. In addition, NFuse's COM-compliant Java objects can be accessed from various Web server scripts, such as Java Server Pages and Microsoft's Active Server Pages.

Simplified script writing. For those administrators not familiar with Web server scripting, NFuse includes proprietary HTML extensions. Administrators can use these HTML extensions to write Web server scripts without requiring knowledge of any scripting languages or scripting models.

Benefits of Deploying NFuse with Corporate Yahoo!

Enhances the user's Web browser experience by providing the means to access and deliver any application via a Web browser without special HTML, scripting, Java or other proprietary means.

- Provides a cost-effective, fast solution compared with developing a corporate intranet solution and delivers a high ROI for customers.
- Provides the ability to integrate standard HTML content with managed server-based application deployment using Citrix Independent Computing Architecture (ICA®).
- Provides total control to the Web author or application service provider to customize the user interface, provide personalized content and application access, and be easily integrated into existing corporate intranets, extranets or application portals.

How it Works

To publish applications, customers simply create application portals with the Yahoo! PortalBuilder software. Administrators define the application 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.

Deploying NFuse

An NFuse deployment involves the interaction of three network components:

1. Citrix Server Farm

A Citrix server farm is a group of Citrix servers managed as a single entity that share some form of physical connection and a common base of user accounts.

Important among a server farm's standard capabilities is application publishing. Application publishing is an administrative task that lets Citrix server administrators expose specific applications hosted by the server farm on a per-user or per-user-group basis. Users can connect and initiate ICA sessions when a Citrix server administrator publishes an application for a group of users.

With the advent of MetaFrame 1.8, the Citrix server farm added Program Neighborhood to application publishing. Program Neighborhood or Program Neighborhood Services automates the client-side configuration process by eliminating the need for administrators or ICA Client users to browse the network for published applications. Using a Program Neighborhood-capable ICA Client, any user can authenticate to the farm and receive a list of user-specific published applications. This list of applications is called an application set.

With NFuse, the Citrix server farm functions as an application serving back-end. In this role, the server farm performs two important duties:

- **Supply application set information.** The Citrix server responds to requests by NFuse for application set information. The server farm exports that information to NFuse for formatting into HTML pages that a user can view in a Web browser.
- **Host applications.** At a user's request (when the user clicks a link in a Web page), the server farm hosts an ICA session containing the requested application.

2. The Portal

The portal hosts the NFuse Java objects. The NFuse Java objects are a group of COM-compliant Java objects that can call from Web server-side scripts to perform several tasks that are important to publishing applications. The NFuse Java Objects perform the following services:

- Authenticate users to a Citrix server farm
- Retrieve per-user application sets from a server farm through XML
- Allow modification of the properties of individual applications before presenting them to users
- Display the application icons on the portal for users to begin accessing applications

The NFuse Java objects are added to the portal as part of the Citrix Web Server Extension. To allow users to access MetaFrame published applications from within a Corporate Yahoo! page, the portal administrator can define one or several NFuse content categories. The administrator can choose to create a Corporate Yahoo! category that will show the same list of applications to all users, or create a category that shows the published applications specific to one particular user.

3. ICA Client Device

In an ICA Client device, the Web browser and ICA Client work together as a viewer and engine. The Web browser lets users view application sets (created by server-side scripting in a NFuse Web site) while the ICA Client acts as the engine that launches published applications.

Citrix supports virtually any type of device running on virtually any operating system. Browser-enabled environments supported by ICA include:

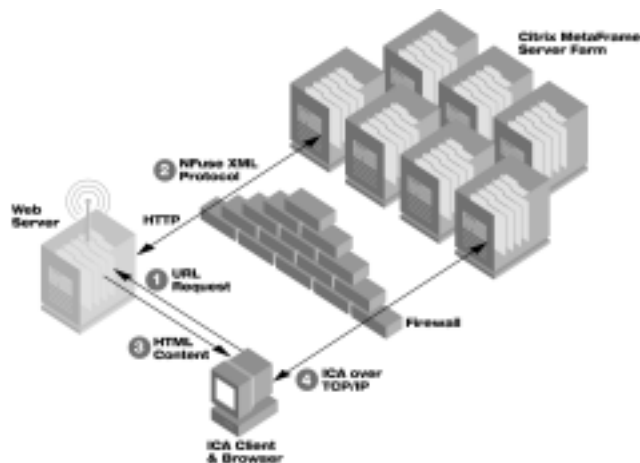
- Windows32, UNIX, Linux, Web (Active X), Web (Plug-in), Windows16, Java-Applet, Java-Application and Macintosh.

For a complete list of browser/client combinations, please visit <http://www.citrix.com/products/nfuse/>

NFuse In Action

NFuse is an excellent solution for those who wish to rapidly deploy Windows, Java or UNIX applications across the Internet, corporate intranets, or partner extranets. The following diagram describes the interaction between the Citrix server farm, NFuse Web server, and ICA Client device when deployed via the Internet.

Citrix NFuse making web delivery easy



About Citrix

Citrix Systems, Inc. is a global leader in application server software and services that offer “Digital Independence™” — the ability to run any application on any device over any connection, wireless to Web. Citrix’s solutions enable organizations of all types, from major enterprises to emerging application service providers (ASPs), to reach more users, with more applications, in more locations — and achieve this with greater speed and predictability, and lower costs.

Founded in 1989, Citrix today is one of the world’s fastest-growing software companies, with more than 100,000 customers worldwide, including every one of the FORTUNE 100 firms. Its products, including MetaFrame application server software, NFuse application portal software, and Independent Computing Architecture (ICA®), a core application-server technology, have been widely adopted by the corporate mainstream to achieve key business goals. The firm, which markets its solutions through value-added resellers, system integrators and OEM licensees, is headquartered in Fort Lauderdale, Fla. Citrix is traded on The Nasdaq Stock MarketSM under the symbol CTXS and is part of the Standard & Poor’s 500 Index. For more information, please visit the Citrix Web site at <http://www.citrix.com>.

Summary

Citrix NFuse can have a huge positive impact upon a company's bottom line by enabling customers to integrate, personalize and control business-critical data and applications from a single Web page.

NFuse provides customers with the ability to quickly take advantage of the Internet, develop collaborative partnerships via extranets, and to have a better-informed and more productive internal staff via a corporate Web site — all by just leveraging existing computing environments. NFuse can provide companies with “Webability” - the ability to run any application on the Web and provide personalized content and access to applications in a highly manageable fashion.

NFuse with Corporate Yahoo! brings the benefits of personalized Web content and applications, with minimal changes to existing computing environments. For existing MetaFrame customers, this offers a win-win situation by extending application management capabilities to include customized information on corporate Web pages.

Customers looking to create a company Web page using an integrated, customizable portal will find a great deal of value with this joint solution in the areas of rapid application deployment and information content management.

To take the first step towards “Webifying” your business, check out the NFuse product section on the Citrix Web site at <http://www.citrix.com/products/nfuse/> or contact your local Citrix representative.



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