

WHITE PAPER



HOST ACCESS EVOLUTION

Cut emulation costs by evolving host access



Cut Emulation Costs By Evolving Host Access

Host access choices range from rich, full-featured, tried and true “fat” clients running on windows desktops to “thin” and “zero footprint” browser-based clients. Evaluating the options and choosing the right solution will save time and money for your organization. To maximize your return on investment (ROI) and to stay on the right evolutionary path, you need to understand your user base. By matching user needs with the appropriate host access technologies, you can provide the right solution and lower your expenditures in cost and time.

Why Read this White Paper?

This paper will guide you in profiling and segmenting your user groups and matching them with the best technology fit to maximize your organization’s ROI with the least impact to users, and at the same time offering new opportunities for increasing user productivity.

Client Terminology

Host access providers describe their products using a variety of terms. In order to choose the right solution, you must first be able to equate terms with similar meanings. Below is a list of the most frequently used terms for host access client types:

Fat Client

- Thick Client
- Rich Client
- Traditional Client
- PC-to-Host Client
- Windows-based Client

Thin Client

- Thick Client
- Web-to-Host Client
- Browser-based Client
- “Green Screen” in a browser

Zero Footprint Client

- GUI Client
- HTML Client
- Published Client
- Host published Client

In this paper, we use the following terminology:

- “Fat Client” equates to the highest level of features, high bandwidth needs, and large footprint (40 megabytes or greater)
- “Thin Client” equates to a high level of features, low bandwidth needs, and small footprint (4 megabytes or less)
- “Zero Footprint Client” equates to a graphical user interface, low bandwidth needs and no footprint (0 megabytes)

The Origin of User Needs

The evolutions of the Internet and the related emerging technology standards have set a new paradigm for enterprise computing. Today, organizations are looking to intranets, extranets, and the Internet as tools to get better host connectivity to employees, partners, and customers.

What does this mean for your existing user base that is comfortable with a Windows-based, Fat Client, desktop solution? This paper answers that question.

While your first inclination may be to replace all Fat Clients with Thin or Zero Footprint solutions, you need to determine whether that is really the optimal solution for your enterprise. Will that deliver the maximum ROI for your company? Will your user base be as productive using newer technology as it was with the Fat Client?

The best decisions regarding changes to host access can be made only after analyzing the impact on the user. Bypassing this step and changing the interface to the applications that users work with on a daily basis may cause serious problems for the users and the enterprise.

Understanding User Issues

Phil Murphy, an analyst at Forrester Research, in his paper “Answer these Seven Questions Before Searching for Web-to-Host Tools,” raises issues that you should consider. This white paper discusses two of those questions and adds several more. Before making changes that will impact your user base, it is imperative that you give thought to the following:

1. “Why Web enable this application?”
2. “Who is the intended user?”
3. “How many users will be affected?”
4. “What type of content do they access?”
5. “What type of transaction do users handle?”
6. “What are the security requirements?”
7. “Have we changed how users work?”

This white paper brings up issues for you to consider in relationship to each of these questions and describes Micro Focus products that provide scalable solutions.

Why Web Enable this Application?

Due to the advances any innovative technology brings to an environment, we have a tendency to rush in and embrace it.

However, automatically upgrading to the new technology without understanding the user base and the long-term risks and benefits may not create the expected improvements.

For example, how many organizations went out and tried to rewrite their core applications to replace the host systems without understanding the possible drawbacks as well as the advantages?

Many organizations tried and ended up scrapping the entire project after millions of dollars were spent. These organizations had two problems, 1) the scope of the effort and 2) the user "revolt."

The majority of host systems have decades of business logic embedded within the user interface and recreation on another platform is almost impossible.

User "revolt" is when a new GUI interface is implemented but the user community refuses to take advantage of the new technology. Given the fact that the keystrokes are almost embedded into their reflexes, this is not a surprising phenomenon.

Suddenly, the new technology demonstrated shortcomings that you had not considered and the supposed productivity gain was lost.

What if this happened in an enterprise with 10,000, 20,000, even 50,000 or more users?

Upgrading to new technology can be a real win or a real disaster. To make it a win, you need to thoroughly understand what the benefits will be and how the end user will be affected.

Why Web Enable this Application?

To identify whether a new technology will benefit users, you must first understand how the users work with their current host access product.

Today, the majority of desktop users are accessing host information through Fat Clients. While a Fat Client delivers the most features to users' desktops, these features may go unused or may not be necessary for productivity.

To identify which host access solution (Fat, Thin, or Zero) benefits your users, you should understand the characteristics of different types of host access users.

User Types

There are at least four types of users:

- Power User
- Typical User
- Occasional User
- External User

The first three user types are usually internal. The number of each user type in the enterprise may vary from a few to thousands.

Power User. This small group of users pushes the limits of the software and develops or leverages its productivity tools. They use the host to complete the majority of their work, are expert computer users, and understand the applications very well.

Typical User. Usually the largest group, these users use the host to complete the majority of their work. They use the productivity tools developed by the power users but do not create tools themselves.

Occasional User. The occasional user is characterized by the need for quick access, but infrequently throughout the workday. They generally use a small subset of application features to view or enter data.

External User. External users usually are not familiar with a "green screen." They are generally remote users and can be partners, vendors or a new user base the enterprise wants connected to the host system. External users do not use private lines into the system and do not control the host, but can benefit from information stored on the host. Most outsourced or offshore employees would fall into this category.

How Many Users Will be Affected?

Once you classify the users in your enterprise, you need to determine how many of each type there are in order to create a solution that will work for all types of users. In addition, you need to find out how many of those users are new to the organization. How new are they? How many have been added over the last month? Over the last six months? Over the last year? How many do you expect to add in the coming year?

The answers to these questions will help you identify the host access solution you should choose.

What Type of Content Do They Access?

To further classify your users, you need to find out what type of content is being provided to the users. Is it static? Is it dynamic? Or is it a combination of both?

Static Content. If the data is static in nature (for example, documents and forms), users may be able to use the Web-enabled Zero Footprint solution.

Dynamic Content. If the data is dynamic (for example, graphics that are updated on a regular basis), users may need a higher bandwidth connection.

Combination Content. If the user receives a combination of static and dynamic content (typical for a power user), you have to plan for the dynamic, bandwidth-hogging resources.

What Types of Transactions Do Users Handle?

To determine an appropriate solution, you need to factor in the types of transactions that a user handles. Does the user conduct transactions on the host? Will the transactions involve multiple hosts?

Web-enabled tools may require implementing additional protocol types (on top of HTTP) to maintain data integrity. Additional custom programming may also be required to access that data (which translates to more costs and possible delays in migration).

What Are the Security Requirements?

The key security issue is how to maintain the security of the user's session regardless of the client being used.

Have We Changed How Users Work?

Answering this question will help IT estimate the time needed to retrain the users on a new interface or host access method. Changes caused by a new solution will impact even the most knowledgeable power users.

Clearly there are financial and time-saving rewards for the enterprise willing to analyze and move the right users to new host access solutions.

The Evolution of Host Access Technology

After analyzing your users, you need to understand the available client choices in order to match users to the appropriate client technology.

In the early years of host access, data was stored on a mainframe computer and accessed through a terminal of some kind, usually either a Teletype interface or a "dumb" terminal ("green screen") wired to the host. When printing was required, a "green bar" printout was delivered to a giant host connected printer.

As technology advanced, more terminals were wired into the mainframe, first directly, then within the same building, and then remotely.

The Personal Computer (PC) came along in 1981, followed by IRMA (the first mass-market terminal emulator) in 1982. Suddenly, everyone wanted to use the PC as a "green screen." That created a new market opportunity and the Fat Client was developed.

The Fat Client

The Fat Client is described as terminal emulation software that executes on a PC. This software takes the data from a host, manipulates it, and displays it using the look and feel of an old style data terminal, like a 3270 series (Figure 1) or a 5250. The software that emulates the terminal requires a large (~40 to ~90 MB) footprint on the PC.

The PC (the client) does all the work and the results translate back and forth between the two computers. Fat Clients came of age in the 1980s and reached the pinnacle of performance and productivity features by the early 1990s. Today, they are well-established desktop solutions for delivering host access to an internal user base.

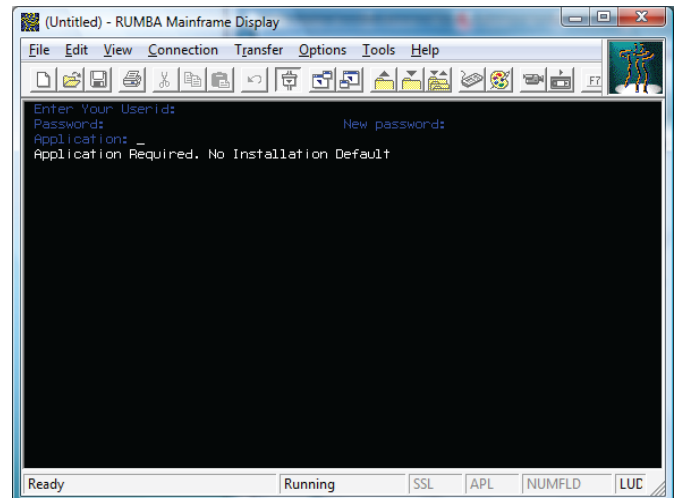


Figure 1. Sample RUMBA on Vista Fat Client Screen

A Fat Client is usually:

- Associated with Power Users
- Internal to the enterprise (behind a firewall)
- High bandwidth
- Feature rich

The advantages of a Fat Client configuration include:

- Rich features - all or most of the tools of the terminal are available on the client
- User flexibility - users have complete control over how they interact with the host

Providing this architecture outside of the enterprise environment has disadvantages. It can be costly from an IT networking and maintenance perspective for the following reasons:

- High costs of private network lines to facilitate the high bandwidth demands of Fat Clients
- High costs of providing individual IT departments at all remote sites to maintain the software and user base
- Time-consuming tasks such as implementing updates and upgrades

As browsers became the enterprise application of choice, customers and host access vendors looked on the technology as a low-cost opportunity for leveraging this common interface. As a result, the "Thin Client" evolved.

The Thin Client

The “Thin Client” gives IT (and users) the option of retaining essentially all of the core functions of the Fat Client while maintaining the integrity of the “green screen” (as Figure 2 illustrates). Thin Clients are typically offered as ActiveX or JavaBean controls, which create the necessary framework for host sessions to work within a browser.

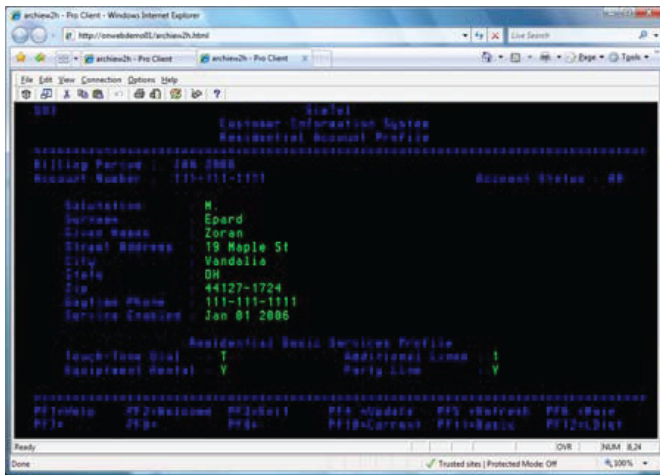


Figure 2. Sample W2H in IE7.0 Thin Client Screen

A Thin Client is usually:

- Associated with Typical Users
- Internal or external to the enterprise
- Low bandwidth
- Supported by high-level features

The advantages to providing Thin Client architecture to your user base:

- Smaller footprint (instead of ~90 MB, Thin Clients can be as small as ~300 KB with Micro Focus OnWeb® Web-to-Host clients, for example)
- Web browser support, which provides a common user interface for delivering host access to occasional and external users
- “Green screen” environment preserved for users experienced in working quickly through that interface Common terminal support (for example, 3270 and 5250 terminal types)
- Efficient software administration, including centralized deployment and software updates - no need to visit individual desktops

Zero Footprint

The latest innovation in host access delivers host published clients via a Web browser in what is called a Zero Footprint configuration. Figure 3 illustrates a typical “green screen” as displayed through an HTML application. IT can deliver this new look and feel to a user base inexperienced in host access and help them become productive more quickly.

A Zero Footprint Client is usually:

- Associated with External and Occasional Users
- Internal or external to the enterprise
- Offshore or outsourced workers
- Low bandwidth
- Associated with the need for GUI or highly intuitive interfaces
- Ideal for users inexperienced with a “green screen”

The advantages of this technology are:

- No desktop footprint
- No SSL required on the host - uses HTTPS on the Web server
- No need for certificates from the host - uses Web server digital certificates

However, the smaller footprint comes at a price:

- The risk of “user revolt” will increase
- Speed of individual transactions are slower but can be combined for a faster overall experience
- The terminal support is limited to 3270/5250

It is imperative that you evaluate the advantages and disadvantages of each technology to determine which one the users will need to complete their work most effectively.

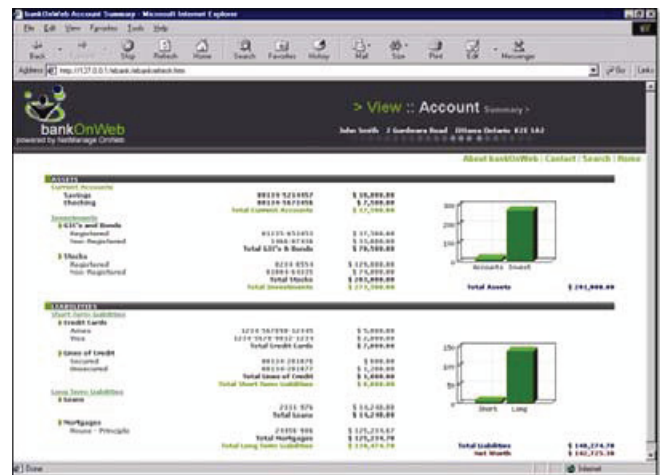


Figure 3. Sample Zero Footprint Screen

A Micro Focus Customer's Evolutionary Path

In this paper, you have read about the types of users involved in the host access evolution and the issues they face; the technology available and the trade-offs for each of those choices; and the solutions Micro Focus provides. It is time to examine a customer's evolutionary path.

One of Micro Focus customers has a large (over 75,000 seats) enterprise user base accessing "green screen" technology.

This customer is considering migrating 50,000 Fat Client seats to Thin Client. They realize that they could save considerable money by changing to a Thin Client solution now and positioning themselves for a Zero Footprint solution in the future.

However, with that many seats, they are being cautious about the evolutionary path to newer technology. They are moving slowly and evaluating the best choice for each user group.

The Goal

Over time, the customer intends to transition 85 to 90 percent of the Fat Client user base to a browser-based Zero Footprint host access solution. The remaining 10 to 15 percent will retain the Fat Client since they are in the Power User category.

This customer has set a timeline of two years to accomplish the 85 to 90 percent evolution to a Web-based solution. This timeline synchronizes the host access user population with other non-host access Web-based application initiatives.

"It does not make sense to rush this evolution. It is better to take the time and place a fully functional Web-based desktop in front of the user. This will reduce the frustration of not being able to access everything from a singular interface," according to the customer.

The customer also believes that centralized control is a big consideration in using a browser-based solution. The remote clients, whether they are ActiveX controls or JavaBeans, can still be configured to manage how the users access the host applications.

Getting Started

The first step in the evolution will involve almost half of the customer's current seats - a very aggressive move, considering the customer's cautious nature.

This is only possible because of the great working relationship between Micro Focus and the customer. In addition, Micro Focus has been asking the right questions and has had all the right answers.

The Evolution

The group evolving to Thin Client first requires a centralized area where they can access all of the applications needed to handle their everyday business. Many desktop applications are being rewritten for the Web to accomplish this. With guidance from Micro Focus, this will be done in steps so the customer only has to rewrite the applications once and not waste dollars and man hours rewriting the applications several times for the evolution to a Web-based desktop.

The customer considered doing a rewrite to keep some of the Fat Client functionality in the Thin Client environment, but has opted to maintain a dual desktop for a while - PC-based to keep the functionality of the older products and Web-based to start the evolutionary process.

As applications are written for the Web-based desktop, IT will migrate the user base to them. The first migration is to the Micro Focus OnWeb Web-to-Host ActiveX client control. The department that oversees these changes wants to keep almost all of the functionality of the Fat Client product, but in a browser-based application.

Making Right Choices

This customer understands that administration is easier if you centrally control how groups of users access the host and provide them the features that they need to do their jobs efficiently. When needed, you can add functionality to increase productivity.

In the Micro Focus OnWeb Web-to-Host world, the product options include Host Pro or Host Java.

Typical Users will either fall into the Host Pro or Host Java category, depending on the features they require. The Typical Users are the hardest to put a label on, as they range from simple "green screen" operators to more advanced users.

Typical Users will be the largest group of internal users that will eventually move to a Zero Footprint graphical interface for the majority of their host access. The External User also falls into the Zero Footprint area.

The customer likes having the ability to control how the users interact with the host. The groups that consist of Power Users will likely retain the Fat Client, as it provides the extra boost of functionality they need.

Making Right Choices

In an organization with 75,000 seats, the costs mount quickly - as do the savings. By implementing a Micro Focus solution that helps them lower their costs, the customer expects a quick return on their investment. The customer calculated the ROI based on:

- Identifying that 15 percent of users will continue to need the rich feature set of the Fat Client solution. Forcing these users to change to a technology that reduces or eliminates their productivity would negatively affect ROI (yet another instance of "revolt"). According to the "Web-to-Host: Reducing Total Cost of Ownership" white paper from the Tolly Group, "Loss of productivity includes down time due to various factors... This is the single largest component of the TCO and is approximately 51% of the TCO." Keeping the Fat Client for users that need its rich features is vital to a successful evolution.
- Being able to deploy software upgrades from a central administration point instead of having to visit each desktop provides a huge cost benefit and frees up the time and expertise of IT personnel. According to the Tolly Group white paper, application maintenance "constitutes 6% of the overall TCO. It can be reduced by as much as 75% with automatic application installation..." available through a central distribution point. Estimated savings from central deployment: \$375,000 annually.

- Maintaining the integrity of the “green screen” in a Web environment eliminates the training costs associated with moving experienced Fat Client users to another environment. Estimated savings calculated on 25,000 users: \$600,000.
- Extending Thin Client technology through custom programming (a feature not available in traditional Fat Clients) allows for even more savings. This customer implemented custom programming that eliminated redundancy and user errors during the login process through an automated single sign-on process. Estimated cost savings: \$30,000 per day.
- Positioning them strategically to maximize Fat, Thin and Zero Footprint Clients prepares for future ROI with Zero Footprint Clients. This ROI will be recognized through new user participation that did not exist previously; reduced training costs for new users because of a more intuitive interface; and more business-to-business interaction between partners and vendors unfamiliar with “green screen” applications.

This magnitude of savings across multiple areas is clearly a strong return on investment. The evolution to a Thin or Zero Footprint Client is an investment that provides enormous benefits in a short timeframe.

Summary

Host access technology has evolved in amazing ways from the large footprint Fat Client to the Zero Footprint products available today. To maximize the benefits of the changes, however, you must do your homework and choose the right products.

The three key issues that you must address to complete a rewarding host access evolution are:

Understand users’ needs. Base your choices and make your decisions on the knowledge of your users and experience of your vendor. Verify that the new technology does not prevent one of your user types from doing their work effectively. Make sure that users retain access to features they frequently use and, as much as possible, to layouts with which they are familiar. Be sure that users have access to the content they need to do their job.

Leverage the right client technologies. Fight the urge to rush head-on into implementing the latest and greatest technology without understanding your business needs. It is critical that you choose the clients that work for your specific environment and empower your users to work productively and effectively in order to increase your enterprise’s ROI.

Choose a vendor that is experienced in delivering the right host access solutions. You need a vendor that has the know-how and the products to accomplish your goals. Micro Focus has extensive experience with extending core applications and is the expert in rapidly transforming host-based applications to the Web.

The Evolution

Regardless of the client type, or the user type, Micro Focus products provide the host access solutions that maximize ROI and user productivity.

Information for Choosing Micro Focus: the Right Vendor for Your Host Access Evolution

Micro Focus has over 17 years of experience in providing the right host access solutions based on:

- User requirements
- Environment
- Content type
- Evolution needs

Micro Focus is the expert in rapidly transforming host-based applications to the Web. The company focuses on extending core applications for Web-enabled business. It is what we do best. Every day, Micro Focus products demonstrate unmatched deployment speed resulting in unparalleled ROI. This has been proven in 95% of the Fortune 500 companies.

At Micro Focus, we’ve developed a family of products and services that in minutes transforms intra-company applications into Web applications that are available quickly and easily any place, any time. However, we do not stop there.

We focus on helping you get the right information to the right person at the right time. We help you use all of your important applications to create new business opportunities and extend the life of your core applications. In today’s economy, there is no better way to maximize your return on investment.

Micro Focus fulfills the Web-extended enterprise’s need to evolve to the new paradigm with:

- Time-tested Windows-based desktop solutions with innovative features, designed to increase a Power User’s productivity without compromising the ability to move to browser-based computing in the future. Micro Focus software helps you maintain or increase employee productivity while preserving IT investments.
- The most effective and non-intrusive way for internal Typical, Occasional or External Users to gain access to browser-based terminal emulation without the disruption of a new user interface or the recreation of user-centric keyboards and macros.
- A more timely way of accessing and distributing internal and external business-relevant information
- A more efficient way to manage and administer company-wide information and applications, reducing total cost of ownership by Web-enabling mainframes, AS/400s, and UNIX hosts and blending them with intranet, extranets and Internet solutions
- A trusted partnership with our customers who want to leverage rapidly growing Internet opportunities. Micro Focus understands that the key is to provide access to a variety of business data while making it more useful and manageable

The Micro Focus Products

This section describes the Micro Focus Fat Client, Thin Client, and Zero Footprint Client products that can fill your needs.

For further product information, please visit our website at www.microfocus.com

Fat Client - RUMBA® OFFICE

RUMBA software provides traditional connectivity from Windows desktops to virtually any host across any network, with mission-critical reliability. The innovative features of RUMBA software increase user productivity, reduce Total Cost of Ownership (TCO), and simplify enterprise migrations to browser-based and server-based computing. The component-based architecture of RUMBA software ensures optimal performance and fast, flexible application development. RUMBA products enable users to connect to and use information on IBM mainframe, IBM AS/400, DEC VAX, Hewlett-Packard, and UNIX systems. RUMBA PC-to-Host runs on the latest Windows platforms including Microsoft Vista.

- Provides functions and interfaces similar to other compliant applications, which minimizes user training
- Supports features such as roaming and multiple user profiles to support today's flexible work environment

RUMBA PC-to-Host leverages the most current installation and distribution technologies.

- Enables robust, standardized install/de-install to minimize errors and confusion when installing new software. Provides for stronger shared component management to minimize accidental elimination of shared files. Increases speed of software installation and de-installation. Supports standard configuration tools to enable distribution of specific applications and configurations according to user needs and privileges. Accelerates distribution and installation of maintenance releases. RUMBA PC-to-Host provides enhanced security through data authentication and encryption.

RUMBA PC-to-Host improves access to software for the handicapped.

- Helps state and local governments meet federal funding rules for software acquisition
- Helps private corporations increase the satisfaction and productivity of their handicapped employees
- Section 508 compliant

Thin Client - Micro Focus OnWeb Web-to-Host

Micro Focus OnWeb Web-to-Host lets you cost-effectively leverage important assets on your core host systems - literally within minutes. Through a single Web-browser interface, your customers, partners, and employees will have convenient and secure access to mission-critical applications and data residing on virtually any host, across your intranet, extranet, or the Internet, lowering your total cost of ownership.

Micro Focus OnWeb Web-to-Host provides extensive host access functionality with simple configuration for end-users and delivers high-level functionality.

- Provides seamless security through direct or tunneled SSL
- Incorporates real-time help desk support across an intranet
- Supports multi-session, multi-host
- Supports host printer emulation
- Includes Local Start for direct access to the host with or without the Web-server

Zero Footprint Client - Micro Focus OnWeb Host Publishing

Micro Focus OnWeb Host Publishing provides easy Web access to host applications to effectively meet the demands of an increasingly mobile and distributed user base.

- Provides fast, intuitive Web-based host access
- Allows you to make host applications available faster than you ever imagined, without having to write a single line of code

Micro Focus OnWeb App Express instantly converts 3270 and 5250 screen-based applications into HTML pages for presentation in a browser.

Micro Focus OnWeb makes host information easier for everyone to use. Even new users or users not familiar with the native application will find it easy to understand the Web page format.

- Presents host information in graphical Web pages through customizable HTML
- Provides intuitive host access without programming
- Allows you to navigate a host application; capture a "green screen;" apply templates; insert graphics, buttons and menus; format text; and view the customized screen in your preferred HTML editor with easy point-and-click operation
- Lets you select information fields from different screens within the same application and combine them into a single customized Web page

About Micro Focus

Micro Focus, a member of the FTSE 250, provides innovative software that allows companies to dramatically improve the business value of their enterprise applications. Micro Focus Enterprise Application Modernization and Management software enables customers' business applications to respond rapidly to market changes and embrace modern architectures with reduced cost and risk.

For additional information please visit: www.microfocus.com