IBM Host On-Demand

The SNA Access Solution for Java-Enabled Clients

White Paper

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Introduction

The Internet, or World Wide Web (WWW), reaches more and more users every day. Researchers, business professionals, teachers, students, and people everywhere exploit these resources with the help of Web browsers. In addition to the Internet, intranets are emerging as valuable internal assets for companies.

Beyond accessing traditional Internet resources, such as Web servers, Web-oriented users also require access to central computer information and services, though usually on a more limited or infrequent basis. Central computer access allows critical information resources, located on an SNA host, to be shared among colleagues, vendors, business partners, suppliers, and customers. Web-based users have different computing needs from users operating within the traditional host environment. A Web user may not possess a 3270 emulator, for example, because the host access required is not as frequent as that of a traditional SNA host user. What is needed to address this growing sector of the work force is a multiprotocol solution that can seamlessly access 3270 applications from industry-standard Web browsers.

IBM Host On-Demand

IBM Host On-Demand is an Internet-to-SNA connectivity solution that provides 3270 application discovery and access through the WWW. Web users needing host applications, such as public catalogs, software applications, databases, or other resources, can use Host On-Demand from inside their Java-enabled desktops or Web browsers to access central computer data. For Web-oriented users with occasional need for central computer access, Host On-Demand provides an alternative to installing a terminal emulation program on the desktop. Host On-Demand brings network computing to the Web by enabling users to seamlessly access non-Internet-based content and services.

Host On-Demand uses the Java environment and native TN3270 and Internet protocols to provide platform-independent host access from within a Web-browser window. Host On-Demand integrates existing central computer data and resources with intranet, Internet, and Web capabilities. The result is dramatically increased availability of host-based information for Web-oriented users.

Features and advantages

Host On-Demand boasts a number of powerful features and benefits, such as:

- Emulator functions on demand
- Java-based implementation
- Customized 3270 windows
- Multiple sessions
- Persistent connections
- Platform flexibility
- Security
- Investment protection

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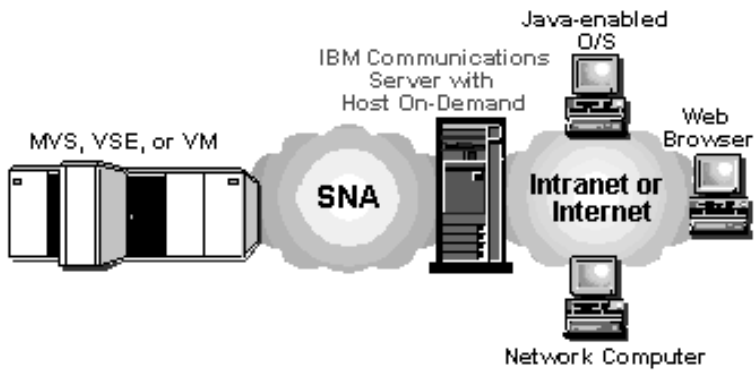
Emulator functions on demand

Host On-Demand is the solution for SNA application access through a standard, Java-enabled desktop or Web browser. You don't need any additional software on your computer to use Host On-Demand's many features. When you click on an SNA application hyper link, Host On-Demand dynamically downloads its Java-based TN3270 emulator to your computer. IBM Communications Servers maintain Host On-Demand, including new releases or upgrades. Because maintenance is performed centrally, you don't have to worry about whether you have the latest version. The most up-to-date release is always downloaded automatically each time you invoke Host On-Demand. When you close the Host On-Demand window, or your browser window, Host On-Demand's emulator is removed from your computer, freeing up resources for other application tasks.



Host On-Demand goes beyond providing emulators on demand. It shortens emulator download time by functionally segmenting its Java-based TN3270 emulator. Only the functions you need are downloaded to your computer. Download time is decreased because you don't have to wait to download functions you won't use. By downloading only the functions needed, Host On-Demand conserves resources on your computer, such as memory and CPU time, and reduces network bandwidth consumption.

Java-based implementation

Host On-Demand's Java-based implementation offers advantages not usually found in similar programs, which instead use Hyper Text Markup Language (HTML) mappers for Web-to-host access. The Host On-Demand TN3270 Java applet provides an intuitive, window user interface that has functions and interactions associated with traditional 3270 terminal screens. The interface will especially appeal to Web users who need occasional access to host applications from a browser. It allows for quick entry and exit from a 3270 application and always displays the current 3270 screen.

General-purpose HTML-to-3270 mapper screens are typically cached by the Web browser. Using a cached screen rather than the actual, real-time screen can present problems. For example, if you page backward in your browser and attempt to reuse a 3270 screen, your SNA session is disrupted. To avoid this problem, you would have to change the Web browser configurations (disable browser page caching) or implement user training. Host On-Demand's

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design eliminates this problem altogether by always presenting you with the current, real-time, SNA application screen.

Host On-Demand provides a true, bi-directional session between you and the SNA application you access. Host On-Demand gives you a persistent connection to the server, eliminating the interruptions caused by connecting and reconnecting. Providing a persistent connection improves network security by denying unauthorized connection to an authorized session. Response time is quicker because you don't have to wait to reconnect to a broken connection. Persistent connections help reduce network traffic, too, by utilizing bandwidth in a stable, uninterrupted manner.

Another significant advantage of Host On-Demand's approach is the ability to receive dynamic real-time screen updates from your SNA application. This capability is typically not available from HTML mappers because they require you to specifically solicit information exchanges from the SNA application.

In addition, with Host On-Demand, you can use your keyboard and PF keys. Or, with your mouse, you can use PF key icons that are built into the program. Other programs, which use HTML mappers instead of Java, don't provide you with access to your keyboard PF keys. Host On-Demand's TN3270 Java applet user interface includes a default window setting, a menu bar, and keyboard and mouse support.

Customized 3270 windows
You can open Host On-Demand's 3270 windows within your existing Web-browser window or as a new window on your desktop. Web-oriented users may be more at ease with SNA application access from within their browser windows. More experienced 3270 users, however, may prefer a separate 3270 window. Host On-Demand provides both choices, so you can customize your window's appearance to fit your individual preferences and application characteristics.

Multiple sessions
Host On-Demand provides multiple-session support, so you can access multiple 3270 applications concurrently. The initial Host On-Demand offering allows each user to access two sessions concurrently.

Persistent connections
Unlike HTML mapping approaches whose connections to the Web server are constantly being terminated and reconnected, Host On-Demand provides a persistent connection to its server. The Host On-Demand persistent connection feature provides several significant advantages.

- Network security is strengthened
- Network traffic is reduced
- Dynamic screen updates are enabled
- Response time is improved
- Bandwidth is conserved

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Platform flexibility
Host On-Demand is available for a wide range of major server platforms, including OS/2, AIX, NetWare, Windows NT and MVS/ESA. As a result, you have a great deal of flexibility in choosing the platform that will provide the Host On-Demand function, and you can leverage your existing hardware investments.

Host On-Demand supports any Java-enabled client platform. This means that Host On-Demand can be invoked not only from your Web browser, but also from your groupware software (such as Lotus Notes) or many operating system desktops (such as OS/2 Warp).

Security
Several levels of security are available with Host On-Demand. You can employ existing Web techniques, such as requiring a user ID and password or implementing firewall filters. Host On-Demand's persistent connection improves network security by preventing the exposure found within HTML mapper implementations. With HTML mapper-driven applications, authorized users are vulnerable to unauthorized connection to their "sessions" while the HTML connection is down. In addition, you're able to use traditional central computer security mechanisms, such as Resource Access Control Facility (RACF) and ACF2.

Investment protection
Host On-Demand adds significant value to your existing investment in IBM Communications Servers. IBM Communications Servers are leading the movement to network computing by being the first multiprotocol gateway to provide seamless integration between 3270 SNA applications and Web users. You can integrate your intranet and Internet environment with your SNA information and services without the need for expensive and time-consuming programming. You don't need to make changes to your existing SNA applications. No programming is needed to implement Host On-Demand. Simply install Host On-Demand on your server and specify a URL for the SNA applications you wish to make accessible.

Host On-Demand supports any Java-enabled clients, such as Java-enabled groupware, web browsers or desktops, or Java-enabled network computers.

Host On-Demand allows you to leverage your existing investment in distributed computing power by performing all of the actual terminal emulation from your client desktop rather than on a central server machine. An added benefit of this implementation is the reduction in communication server hardware requirements needed to support the Host On-Demand function.

Complementary IBM solutions
IBM offers a wide range of host access solutions to meet the various needs found in today's heterogeneous networks. IBM solutions related to Host On-Demand are described briefly below; more detailed information can be accessed via the Web.

The IBM Customer Information Control System (CICS) Internet gateway provides an application-specific solution for Web users who need access to CICS applications. Knowledge of

the specific application being accessed enables the CICS Internet gateway to enable host application-unique functionality to World Wide Web users. The CICS Gateway for Java allows a Java-enabled web browser or network computer to download a Java applet and transparently access CICS data and applications.

The IBM DB2 WWW Connection and its follow-on product IBM Net.Data provide Web users with open Internet access to host-based databases. Knowledge of the specific type of application being accessed enables the DB2 WWW Connection to optimize Web access to database applications. Net.Data provides access to dynamic database data and application development functions to further enhance database access for Java-enabled Web users.

The IBM Personal Communications (PCOMM) products, the IBM premier line of communication clients, provide access to host data and applications over SNA, TCP/IP, and IPX/SPX networks. PCOMM also provides an application platform, with a rich set of SNA APIs. To complement the APIs, PCOMM multiprotocol support allows SNA and Sockets applications to run unchanged over either SNA or TCP/IP networks. PCOMM includes 3270, 5250, TN3270, and TN5250 emulators. PCOMM combines an easy-to-use graphical user interface with powerful tools and features to enhance user productivity. PCOMM is best suited for users who need extensive or demanding access to host applications and who benefit from the many advanced features that it provides.

Host On-Demand complements these offerings by providing a general-purpose, Java-based TN3270 solution that offers SNA application discovery and access for Web-based users.

In many cases a combination of these solutions will be implemented within the enterprise:

- The CICS Internet gateway, to optimize Web browser access to CICS applications
- The DB2 WWW Connection, to optimize Web browser access to database applications
- Personal Communications, for users who need advanced application support and networking capabilities or who would benefit from the user productivity enhancements found in PCOMM
- Host On-Demand, to provide Web users with access to host applications not being supported by one of the application-specific gateway products

Availability

Host On-Demand is available, at no additional charge, as an added feature for customers who have IBM Communications Server for OS/2 Warp, Version 4 Release 1, or IBM Communications Server for AIX, Version 4 Release 2. IBM also makes Host On-Demand available at no charge for NetWare for SAA, Version 2 Release 2. In each case, Host On-Demand can be downloaded from the Web.

Host On-Demand will also be made available soon for the IBM Communications Server for Windows NT (currently in beta test), and in 2Q97 for the MVS/ESA environment.

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Host On-Demand is available on the World Wide Web for licensed users of the following IBM Communications Server family members:

- IBM Communications Server for OS/2 Warp, Version 4 Release 1
- IBM Communications Server for AIX, Version 4 Release 2
- NetWare for SAA, Version 2 Release 2
- IBM Communications Server for Windows NT (currently in beta test)

To download Host On-Demand, you can access the IBM Host On-Demand download page on the WWW at
http://www.networking.ibm.com/hex/hexprod_en.html

Summary

Host On-Demand is delivering network computing to the World Wide Web by enabling Web users to seamlessly access non-Internet-based 3270 application content and services. Host On-Demand has been designed to protect and leverage customers' existing investments in clients, servers, distributed computing power, and 3270 applications. From a client perspective, availability of additional content and services is dramatically increased. Host On-Demand extends the reach of existing 3270 application content and services to an even greater number of users without the need for costly, time-consuming application programming changes.

With the availability of Host On-Demand, IBM Communications Servers are leading the evolution to network computing by being the first multiprotocol gateways to provide seamless integration between 3270 SNA applications and Web users.

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For more information about the IBM Communications Server family or the IBM Personal Communications family, you can access the ECF Home Page at
http://www.networking.ibm.com/ecf/ecfover.html

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