SecureWay Software Host Integration: A Fast, Flexible and Uncompromising Web-to-host Solution

As PC Week put it, based on the results of their first Internet Economy Survey, "companies are stampeding into the Web space." The IT news weekly found 84% of their subscribers conducting electronic business and the remaining 16% planning to in the next two years.[1] These statistics imply that in the very near future practically all enterprises will have invested in e-business. Therefore, merely embracing Internet capabilities isn't going to differentiate an industry leader from the rest of the pack.

Although becoming an e-business will be necessary for improved operations, increased revenues and greater market share, it will not guarantee success. The distinction between winners and losers will depend on *how* a company becomes an e-business -- the soundness of the plan, the speed of the transition, and the ability to continually improve. A winning company needs to capitalize on its current computing resources as well as Internet technologies to establish a complete Web-based service structure that improves conditions for customers, employees, business partners and stakeholders.

While being new and nimble can be a great asset to starting an e-business, established companies have the opportunity to activate long-standing host investments in a Web environment. They can take advantage of the breadth and depth of their host application portfolio and data, the same resources they have been using to successfully run their business for years. Accessing information on IBM System/390®s, AS/400 ®s and other back end resources such as UNIX and Window NT servers from the Web can improve a company's competitive position. But the degree of success correlates directly with how fast, how securely and how flexibly an organization can accomplish this.

Organizations need a way to quickly and efficiently extend, integrate and publish host information to meet the unique needs of all their Web users. Typically the various user needs call for a combination of technologies. In some instances where the required information is available through existing host applications, only a delivery method is needed. On the other hand, if the existing host data needs additional business logic, a new application must be developed.   The SecureWay Host Integration Solution offers a range of products that allow companies to start simply and enhance integration according to their own schedules.

---

[1] PR Newswire, "PC Week Internet Economy Study Finds Companies Stampeding into the Web Space Study Also Shows That MIS/IS/IT Departments are Most Likely to Own Budget And Control Implementation of Their Company's E-Business System" by Greg Jarboe of Ziff-Davis, March 4, 1999

Host integration offers companies the benefits of a new Web application portfolio without having to invest and build one. The IBM SecureWay Host Integration Solution delivers a complete infrastructure for connecting host resources across any network to any user, without requiring any host application changes. This solution offers a complete set of integration functions including:

- terminal emulation,
- screen customization,
- application integration and
- application customization.

SecureWay Software host integration components share common security and directory models and have been tested together across all major platforms. This not only reduces complexity for network users and administrators, it also decreases the cost and risk of building and running an e-business.

Reaping the Rewards of Web-to-host Integration

Web-to-host integration means offering new services and reaching more customers by combining host applications and data with Internet technologies. Intuitively, this kind of solution not only presents growth opportunities; it also brings additional return on prior investments. However, companies can only reap these benefits by taking explicit steps to avoid the pitfalls and risks inherent in expanding access to legacy systems.

A major source of problems comes from implementing a solution that addresses the needs of one set of users but can't be extended to satisfy the slightly-different requirements of another group. Management typically finds this a real problem and their impatience with getting it fixed correlates highly with the size of the initial Web-to-host investment. This lack of flexibility shows up in two ways.

The first is not being able to support multiple types of delivery to different user environments. This problem could stem from developing a solution only for a particular set of operating systems. Clearly, porting the solution to multiple operating systems is not the preferred option. Or the solution itself might be constrained because it was only targeted for one Web environment. For example, if a solution depends on a Java-enabled browser, a new solution needs to be developed for users that can only read HTML pages.

The second variation is the inability to connect to multiple back end sources with the same front end interface. Here, the wrong answer is to create a solution set with a different front end for each type of source data and application. A solution that requires a user to run three different sessions to access DB2$^{®}$, IMS and CICS$^{®}$ data adds significant complexity and consequently weakens the overall security of the system.

The best fix is to bypass these problems altogether by developing a Web-to-host solution based on a common infrastructure and open standards. A flexible open system architecture will deliver more than just operating environment independence. It will allow the Web-to-host solution to connect to multiple host back ends and interoperate with advanced networking technologies.

The most obvious peril that an organization needs to avoid in a Web-to-host integration project is creating programming bugs by changing legacy code. The best way to avoid that high exposure disaster is by not even touching the host system applications. After breaking code that's worked for years, the next worse thing that can happen is introducing vulnerabilities to host system security. Undoubtedly, a Web-to-host solution that diminishes the integrity of the security infrastructure is completely unacceptable.

The final challenge is to enable the use of host data sources for any type of Web application. Most likely, once management starts leveraging host resources, the trend will continue. Therefore it's important that early Web-to-host solutions not constrain future integration work. The host integration solution should support the seamless integration of host information in applications being developed specifically for e-business.

A Web-to-host solution that circumvents these problems also maximizes both e-business potential as well as return on investment. Analyzing the list of possible pitfalls spawns the following checklist of essential characteristics. The best-of -breed host integration solution wiil:

- Require no host system modifications
- Be built upon a common host integration infrastructure
- Offer integrated security
- Be based on an open system architecture
- Provide seamless integration with new e-business applications.

An IS organization that settles for a product or piecemeal solution that doesn't meet these criteria is resigning itself to a less-than-optimal way to leverage the company's existing assets. Fortunately there's no need to compromise with the SecureWay Host Integration Solution.

SecureWay Host Integration Solution: Uncompromising Answers to Web-to-host Challenges

The SecureWay Host Integration Solution offers multiple host connectivity capabilities to satisfy the comprehensive requirements of an industry-leading solution.

- Host emulation, available through SecureWay Host On-Demand for Web-to-host connections in intranet, extranet or Internet environments and SecureWay Personal Communications for SNA and TCP/IP networks.

- Host application rejuvenation using SecureWay Screen Customizer provides custom graphical front ends to host applications. Screen Customizer works with Personal Communications and Host On-Demand.

- Unconstrained Web delivery of host data using SecureWay Host Publisher to provide access from any standard HTML Web browser to multiple back end resources, including 3270, 5250, VT, Java and JDBC through a single front end.

- Programmable host integration with new e-business applications using SecureWay Software host integration APIs and reusable components.

- SNA Gateway Connections across SNA and IP networks with SecureWay Communications Server.

As part of the SecureWay Software family of products, the SecureWay Host Integration Solution provides intelligent connectivity between users and applications in an overall e-business support structure that reduces complexity and risk.   It also exhibits all the essential characteristics of a leading edge Web-to-host offering. The next several sections explain how the SecureWay Host Integration Solution meets these rigorous challenges -- without compromise.

The first challenge, being straightforward, demands little explanation. The SecureWay Software Web-to-host solution requires no modifications to existing host software. Not only does this eliminate the risk of breaking legacy code, it also speeds up the integration process. It is one of the ways that the SecureWay Host Integration Solution protects a company's investments in host application and data.

A Common Host Integration Infrastructure

As an all-encompassing delivery system, the SecureWay Host Integration Solution allows IS organizations to handle unanticipated requirements with relative ease. Where a point solution typically only addresses one type of connectivity, a complete infrastructure has many back end connections as well as multiple delivery methods. The flexibility to link with a wide variety of host systems is another means of protecting host assets. A company with DB2, IMS and CICS can extend its SecureWay Software Web-to-host solution to link the Web to any or all of those host systems as new requirements arise.

The common infrastructure also means that users have a choice of methods for accessing host data. For example, when in the office, an employee would want to take advantage of the speed of a LAN connection, accessing host data via Personal Communications. But when traveling, the easiest access is probably via the company intranet using Host On-Demand. The SecureWay Host Integration Solution with its underlying common infrastructure lets the employee have the same view of the data no matter what method he uses.

The design of the SecureWay Host Integration Solution with five independent but compatible host connectivity options allows companies to increasingly tighten the affinity between host systems and the Web. Host emulation, host rejuvenation, unconstrained Web delivery, programmable host integration and SNA gateways are all based on the same infrastructure. This ensures that companies can start simple and build upon prior Web-to-host connectivity as they move further down the e-business path, without having to redo any past integration work.

A Web-to-host integration solution comprised of multiple point products not based on a common infrastructure takes a lot more effort to develop and manage. The additional work and expense come from the need to deploy completely different products, often from multiple vendors, for each new level of integration. When one product does not build off the others nor share a common base, the organization has to invest time and energy in making these products work together. In the worst cases, new business requirements call for a complete re-engineering effort.

A retail bank extending a 3270 checking and savings account application to home bankers over the Internet as well as branch office tellers via an intranet illustrates the problems of single technology solutions. Even though the information is the same for both groups of users, each group requires different delivery implementations.

For the bank tellers, supplied with Java-enabled systems and focused on productivity, the most appropriate delivery method is Java emulation. It offers both high transaction rates and quick response times. On the other hand, Java emulation is completely wrong for the home bankers. Since Information Systems (IS) does not know what desktop software they use nor has any way of training them on the 3270 application, the home bankers require HTML delivery over the Internet via a familiar Web browser interface.

Without a common host integration infrastructure, IS needs to purchase and support multiple products to satisfy everyone's needs. In this example, it requires a Java emulation solution from one vendor as well as an HTML delivery method from another.

To make matters worse, imagine that halfway through the project, executives decide to make loan information accessible from the Web. If the products purchased do not support integration

of multiple back end sources, the development team wouldn't have a direct way to integrate the loan information coming from a different host system.

Also as home bankers start to depend on Web access, they will want additional views of information and new front end applications that exploits innovative business logic. A host integration product lacking a common infrastructure limits how much information can be shared and extended to e-business. In this scenario the bank's IS organization needs to deploy and support up to four different products in addition to supporting traditional host access users. Initial product costs and longer term support expense can quickly eat away at any positive return on investment.

If the bank had chosen the SecureWay Software Host Integration Solution, it could have relied on composite applications -- applications that integrate multiple host sources -- to satisfy the requirement to make loan information accessible from the Web. And if needed they could have also provided back end connections to Web application servers to use with completely new Web applications.

The SecureWay Host Integration Solution also offers a variety of delivery methods. The common infrastructure across traditional and Web-to-host environments would have made it easy to provide a Java emulator to the tellers and HTML pages to the home bankers. Furthermore, the reduced complexity provided by an integration solution means lower support costs as well as faster response times to line of business demands.

Integrated Security and Directory

Security is vitally important when extending the reach of critical business information from the host to Web users across the Internet and other public networks. Yet adding security functions after the fact typically means having to use unique security products to protect different components of the solutions. The complexity caused by the forced community of disparate integration products makes it difficult and costly to maintain consistent protection across the complete solution. To ensure the host integration solution isn't vulnerable, security must be based on a single infrastructure and integrated into the total Web-to-host solution. As part of the SecureWay Software family, the host integration solution offers a comprehensive set of integrated features for secure connectivity.

The SecureWay Host Integration Solution secures the transport of sensitive information with Secure Sockets layer (SSL) technology, which provides both server and client authentication as well as data encryption. SSL client authentication support, new with Host On-Demand Version 4, provides secure access to legacy applications from the Web. With this feature, companies can set up a Telnet (TN) Server, enabled for client authentication, that requires Host On-Demand users to identify themselves with an X509 V3 certificate. The server will not complete the connection for anyone that does not present the right security credentials. As a result, an enterprise can allow 3270 and 5250 access to Web clients while still maintaining tight security.

The SecureWay Software infrastructure facilitates integrating the SSL client authentication with IBM Vault Registry. This allows enterprises to benefit from industry standard PKIX (Public Key Infrastructure) methods. In this scenario, users request a certificate from the Vault Registry,

which as the Certificate Authority, it manages, maintains and ensures certificate validity. SecureWay Software host integration also supports other certificate authorities.

Strengthening access protection with Vault Registry means that when Host On-Demand users present their certificates to the TNServer, the server can check that they were issued by a valid Certificate Authority and that they haven't expired or been revoked. If a certificate fails to pass any of these checks, access to the server is denied. Support for client authentication will be available in 3Q99 for CS/AIX, CS/NT and CS/390.

In addition, the SecureWay Software host integration client and server products work with existing host security systems (e.g., RACF) so that a Web user can not bypass any host controls when requesting access through a browser interface Finally, the SecureWay Host Integration Solution includes a firewall for extranet/internet environments that provides bulletproof access control as well as support for virtual private networks (VPN).

SecureWay Software host integration not only offers the benefits of integrated security; but integrated directory as well. SecureWay Directory and the IBM Common Schema supply a central repository and a standardized information format to the SecureWay Host Integration Solution. Therefore rather than having to build and maintain unique directories for each host application accessible from the Web, a company can take advantage of an existing centralized directory. This helps speed the deployment of new Web-based services that depend on host resources.

IBM is developing a meta directory for SecureWay Software. When available it will further enhance the benefits of a centralized directory. This meta directory will integrate the directories of existing network applications into the SecureWay Software infrastructure without the need to redesign those directories. IBM's meta directory will be especially useful in linking business partners to internal systems with information spread across multiple directories and relational databases throughout an enterprise. Collating this data into a single repository significantly simplifies the task of securing Web access to previously well-insulated data and applications.

SecureWay Directory is based on an industry standard -- LDAP (Lightweight Directory Access Protocol, which defines a common method for storing and retrieving directory information. In addition to a standard access and retrieval method, IBM has defined the IBM Common Schema, a collection of definitions for objects such as users, groups, access control lists, configurations stored and maintained in the LDAP Directory. In this way, SecureWay Software host integration solutions can benefit from this single view of all enterprise resources, thereby simplifying the access to host applications from the Web.

A Flexible Open Systems Architecture

The nature of e-business drives a number of interoperability requirements for Web-to-host integration. Most enterprises operate in a heterogeneous environment. And if they don't, they will once they start connecting suppliers, partners, customers and other network users. To satisfy these far-reaching connectivity requirements, a host integration solution must support multiple network environments as well as numerous client and server platforms. The host integration solution also needs to support the end users on these platforms in a manner consistent with the capabilities of their environment. For example, attempting to deliver host information via HTML to a Java-enabled system can irritate users -- even keeping them from

using the Web solution. Furthermore, the host integration solution must support middleware on both UNIX and Intel systems to address scalability and security issues.

The SecureWay Host Integration Solution has been designed to accommodate a great variety of users, hardware, software and networking architectures. It supports the industry's predominant client and server platforms. Communications Server runs on Windows NT, SCO UnixWare, AIX, OS/2, Novell Netware and OS/390. Personal Communications runs on Windows 3.1, Windows NT, Windows 95, Windows 98, and OS/2. Host On-Demand can be installed on any client and server platforms that support the Java Virtual Machine (JVM), including OS/2, AIX, SUN Solaris, HP-UX, Windows 95, Windows 98, Windows NT, Linux, OS/400 and OS/390.

The flexibility offered by SecureWay Software host integration also extends to multiple network protocols. While Host On-Demand is designed specifically for IP environments, Personal Communications together with Communications Server provides PC-based host connectivity in TCP/IP or SNA environments. In addition, both of these products support Enterprise Extender (HPR over IP) and AnyNet. These IBM technologies enable applications to run in any network environment. For example, SNA applications can run over a TCP/IP network. Conversely, sockets (TCP/IP) applications can run over an SNA network. This flexibility allows enterprises to choose applications based on business value and change their network infrastructure without worrying that it will affect existing programs.

A Common Cross Platform Development Environment for Seamless Integration

It's not only important to have open standards for flexibility in the runtime environment, it's equally critical to provide a common cross platform development environment. Deploying multiple host access products with limited adaptability has the potential to escalate costs significantly. The promise of high returns, competitive advantages and improved services offered by the reuse and extension of host resources can evaporate quickly when the expenses outrun savings. To keep costs contained while fully exploiting the potential of host assets through custom e-business applications, a host integration solution needs to offer more than a common infrastructure. It needs to supply a common development environment for porting customized front ends from one environment to another.

The SecureWay Host Integration Solution enhances the IBM Application Framework for e-business with a set of common, industry standard host connectivity APIs and reusable components. While the application framework provides a rapid application development environment with products such as VisualAge for Java and WebSphere, SecureWay Software host integration provides the tools to create seamless connections to host resources.   Together the framework tools and the host integration development environment offer companies a way to create new processes and services that leverage host systems. And from the user's perspective, they behave as any other e-business application. End users would not even be aware that the source of the data or the computational logic are one or more host systems.

Start Simple and Grow Fast

Clearly, the SecureWay Host Integration Solution displays the five attributes necessary for uncompromising Web-to-host connectivity. With this offering, companies have the option of choosing a number of different avenues to leverage their host assets in an e-business environment. The fastest and easiest way is through Web browser terminal emulation. Often organizations use this method with intranets and extranets as a first step for creating new ways for employees, business partners and suppliers to do business.

SecureWay Host On-Demand, the first 100% Pure Java terminal emulator on the market, provides 3270, 5250 and VT emulation in a thin client mode. Communications Server enables connections to host SNA-based applications by providing the 3270/5250 gateway support for Host On-Demand clients.

Installed on and served from a Web server, Host On-Demand can reduce the complexity and expense of emulator software deployment and maintenance. Rather than having to install code on every user's desktop, the server administers the Java applet and downloads it on demand. To minimize the impact of slow line speeds, Host On-Demand includes both local caching support as well as a *function-on-demand* client option, where only the requested services are initially downloaded. These features make Host On-Demand the client of choice for Web users that generate high transaction rates.

Host On-Demand runs on any client or server platforms that support the Java Virtual Machine (JVM), including Linux. So businesses don't need to invest in unique solutions for different operating systems. Furthermore, users don't need to install special software on their desktops. This means any user -- not just internal ones -- can take advantage of Host On-Demand capabilities. The only user requirement is a Java-enabled browser.

Modernize the Look and Feel of Host Applications

Sometimes just access to host systems isn't enough. Host systems can be difficult to use especially for external users unfamiliar with the traditional *green screen* interface. To make host applications easier for these users, Host On-Demand provides a default interface that automatically converts any 3270 or 5250 screen into its graphical equivalent.

For a company that wants to customize host screens, SecureWay Screen Customizer goes beyond a default graphical conversion by filtering the information presented to Web users. With Screen Customizer, a business can quickly and easily rejuvenate host applications with a new and more intuitive interface. Using simple drag and drop techniques, this SecureWay Software host integration component allows companies to combine screens from multiple applications and even from multiple hosts into a single graphical presentation. A screen customizer makes green screen computing practically obsolete.

Since Screen Customizer works with both Personal Communications and Host On-Demand, both components can share customized views of applications providing users a consistent look for both traditional host access and Web-based emulation. Rejuvenating host applications with a more natural interface not only makes a company more appealing to external users, it can

increase employee productivity and simplify learning a new system for business partners and suppliers.

Deliver Multiple Back End Sources to Any Web User

Host Publisher, specifically designed for environments where a business can't control user software and hardware, allows a business to integrate multiple sources of data, generate HTML code and publish the output to any Web browser. Host Publisher does all this without requiring the modification of existing applications. It supports any standard HTML browser and does not require Java capabilities. This SecureWay Software host integration component can connect to a wide variety of systems, supporting applications that run on 3270, 5250, VT, Java. It also connects to JDBC databases, such as IBM Universal Database, Oracle, and Sybase. IBM plans to support ActiveX in the near future.

Host Publisher is useful for access control, restricting views to certain data for one user group while allowing complete access to the information for a different user group. For example, a company may open up only a subset of fields in its personnel records to department managers; but, the human resources team has visibility to the entire file.

It also supports the creation of composite applications that appear to users as a single application but in fact are comprised of multiple host sources.   As such, it's an excellent solution for quickly implementing Web self-service applications from existing host applications. This allows companies or government agencies to provide information directly to customers, reduce the expense of call centers, and improve service.

Host Publisher is divided into two major components -- a runtime environment, Host Publisher Server and a development environment, Host Publisher Studio. Companies have the option to ignore the development environment and only use the server to quickly create composite applications. Host Publisher Studio is useful for the next level of host integration where businesses want to re-engineer operations for the Web by creating e-business applications with seamless connections to host resources.

Develop e-business Applications with Seamless Connectivity to Host Assets

Re-engineering existing processes by developing totally new e-business applications that seamlessly integrate the host with the Web requires the most work but also can provide the greatest return on investment. The SecureWay Host Integration Solution provides common host access APIs and reusable components, based on industry standards, to enable businesses to update their operations to take advantage of the latest Internet technologies. These APIs and components, including Host Access Beans for Java, Host Access ActiveX controls and the Host Access Class Libraries, make seamless integration as simple as possible.

The SecureWay Software Host Integration Solution supports and leverages the IBM Web application server strategy. Host Access Beans for Java and Host Access ActiveX controls, included with both Host On-Demand and Personal Communications, jump-start development of custom e-business applications with pre-built emulator functions. They connect back end information to Web applications servers. The Host Access Beans, included in the IBM VisualAge for Java Enterprise Edition, can be used with any Integrated Development

Environment (IDE). And, because they are object-oriented, businesses can reuse what they develop.

Host Publisher Studio creates reusable Java Beans, called Host Integration Objects, that:
- Automatically establish a session with a host,
- Navigate and extract data from an application and
- Disconnect from the host and end the session.

These objects can be used to generate fully customizable HTML or be combined with other IBM connectors, such as MQSeries. And since Host Publisher includes WebSphere Standard edition, companies can easily integrate WebSphere applications into their custom HTML Web pages.

Host Access Class Libraries, an object-oriented API set included with all the Communications Servers as well as Personal Communications and Host On-Demand,   provides access to 3270, 5250 and VT data streams. These class libraries allow businesses to use mission critical information in new ways, such as integrating data from one application into another or replicating information from one data source to another.

A company that wanted to give its customers the ability to access an AS/400 system decided to use WebSphere Advanced Edition with the Host Access Class Library provided by Host On-Demand. Its solution, which required writing Java servlets and Java Server Pages but no change to the AS/400 resources, uses the Host Access Class Library to connect back end resources to the WebSphere Application Server. In turn, WebSphere dynamically generates HTML code that can be presented to Web clients.

While the company could have used Host On-Demand directly for this solution, the WebSphere solution makes the host access transparent to the user. More importantly, WebSphere can communicate to systems such as IMS, CICS and DB2 leaving the option open to extend customer access to other back end systems as needed.

Whether accessing host information using the Host Access Class libraries, creating new applications using the Host On-Demand Java Beans, or building composite applications with Host Publisher, IBM provides full support with Web page builders and visual development environments.

Supporting Traditional Host Access

Extending reach to new environments does not mean abandoning users who connect to host systems across SNA and TCP/IP networks. SecureWay Communications Server provides an SNA gateway featuring today's most advanced SNA capabilities such as Advanced Peer-to-Peer Networking (APPN), High Performance Routing (HPR), and Enterprise Extender support. Personal Communications provides client support for both 3270 and 5250 emulation in both SNA and TCP/IP environments and provides a rich set of APIs for application access to host resources.

In the TCP/IP environment, Communications Server plays the role of a TN server for 3270 emulation. Communications Server for Windows NT in conjunction with Netware for SAA provides 5250 emulation support.   On the client side, Personal Communications not only

provides the same capability as in an SNA network but adds support for VT emulation. And with the multi-protocol support in both of these products, SNA applications still work without modification.

Maximum Return on Investment

A key measuring stick for any Web-to-host solution is its ability to preserve and extend the value of the investments made in both applications and infrastructure. The SecureWay Host Integration Solution, comprised of the five essential host integration characteristics, maximizes returns in several ways.

First, the solution allows businesses to reach new users as well as increase the productivity of current users. Using Web technologies like HTML host publishing (Host Publisher), Java emulation (Host On-Demand) and host application rejuvenation (Screen Customizer), businesses can establish an efficient communications mechanism with customers, business partners, and employees regardless of location or time of day.

These capabilities offer real benefits. For example, by reaching out to customers through the Internet, businesses can create new sales channels that help grow revenue. Internally, it allows businesses to establish lower cost support mechanisms and easier ways to access information. Both of which can reduce operational costs. Reduced costs and increased revenue potential add up to improved profitability.

Second, SecureWay Software host integration solutions let businesses explore new opportunities. With Host Publisher, companies can develop new services by combining data and applications from multiple sources and delivering to any standard Web browser. Also, by using the APIs included with all components, companies can further exploit their legacy resources by integrating host information with a user's desktop applications.

For example, a catalog system, once only accessible through 3270 emulation, can be mined, manipulated and stored in a local data system like an ODBC database, an Excel spreadsheet or Lotus Notes.   The SecureWay Host Integration Solution offers the flexibility to create different views of the same applications, thus allowing more efficient and autonomous use of information by different user groups both inside and outside an enterprise.

The main reason that SecureWay Software host integration customers are seeing high returns on investment is because the solution requires no change to existing host applications and infrastructure. This ensures the continuing integrity and reliability of the solution with little or no programming. As a result, a company can leverage host resources in its e-business quickly -- and start reaping the benefits sooner rather than later.

At first a company may want to limit its investment, and therefore its risk, in extending host applications and data to the Internet. But as the company starts to see the returns from this integration, it may be compelled to further integrate -- making a more seamless connection between the Web and its host systems.

SecureWay Software Host Integration: An Uncompromising e-business Path

The industry is full of vendors who can provide pieces of the host integration puzzle. Unfortunately, these partial solutions require that customers put the puzzle together themselves. Often pieces are missing or don't fit; but even if they do, loosely connected parts don't create a strong foundation for e-business. The SecureWay Host Integration Solution represents a cohesive collection of products and services designed to meet a company's entire need -- now and as it progresses into the future.

The product components (Communications Server, Screen Customizer, Personal Communications, Host On-Demand and Host Publisher) are just part of this solution. To assist companies deploying a host integration solution, IBM offers a wealth of services, including planning, installation, configuration, migration, application development and training as well as support.

IBM also offers a simplified purchasing option. While each product component can be purchased separately, the SecureWay Host Integration Solution can be purchased as a whole. The package features:
- Simple one price per user
- Mix and match of all product components: Communications Server, Personal Communications, Host On-Demand, Screen Customizer and Host Publisher
- No charge platform migrations (e.g., Communications Server for OS/2 to Communications Server for AIX)
- No charge technology migrations (e.g., traditional emulation to Web-to-host emulation)
- The services price includes planning, installation, configuration, migration and training.

This flexibility allows companies to select the technologies best-suited to their needs. It enables business to accommodate changing requirements in a cost effective way.

There are many paths to e-business -- from a quick jump-start with browser-based host emulation to a seamless merging between existing operations and the Web through customization with APIs and pre-built components. The SecureWay Software Host Integration Solution offers a secure and reliable means to take any of them. As part of the SecureWay Software family, this comprehensive host integration software solution plays a well-defined role in a complete e-business infrastructure. So no matter what path is chosen -- no matter what the end goal -- the SecureWay Host Integration Solution helps create and continue to build a critical foundation for e-business.