

# IBM WebSphere Host Access Transformation Services, Version 5.0

## Highlights

- **Transforms 3270 and 5250 screens into HTML dynamically**
- **Migrates one or more host applications to the Web within hours, without having to access or modify source code**
- **Improves host application and ease of use through a zero-footprint and zero-download solution**
- **Integrates with WebSphere Studio, WebSphere Application Server and WebSphere Portal**
- **Supports single sign-on using Tivoli Access Manager**
- **Provides programmed access to host transactions through standard Web services interfaces**

IBM WebSphere® Host Access Transformation Services (HATS) gives you the tools you need to quickly and easily extend your legacy applications to business partners, customers and employees. HATS makes your 3270 and 5250 applications available as HTML through the most-popular Web browsers, while converting your host screens to a Web-like look and feel. HATS provides a zero-footprint Web-to-host solution—the only software needed on the client is a Web browser.

Among HATS most valuable features is its ease of use. One or more host screens are converted to graphical user interfaces (GUIs) on the fly, in real time. And with the HATS rules-based transformation engine, you can have your host applications online with a familiar Web interface within a day of loading the program—without having to access or modify source code.

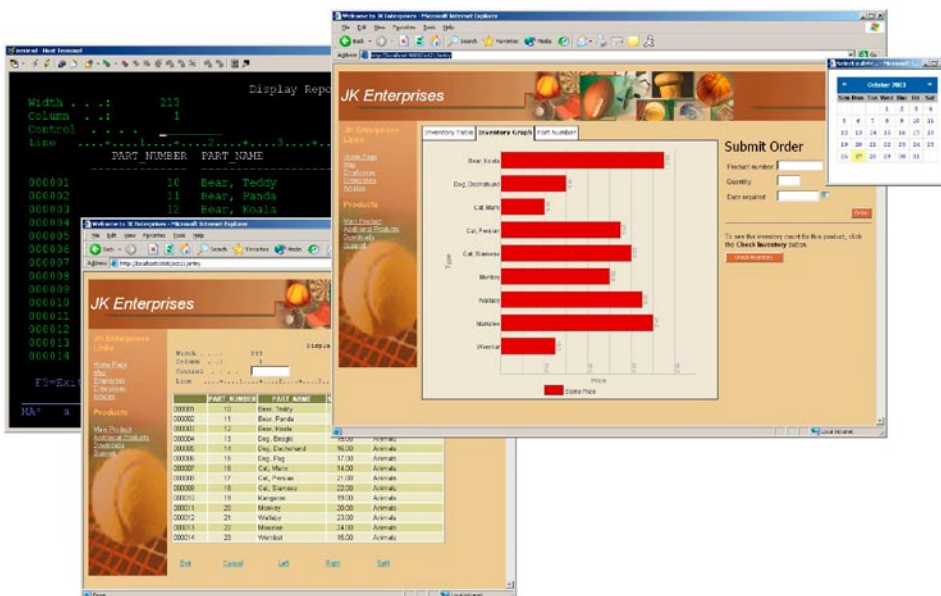


Figure 1. With IBM WebSphere Host Access Transformation Services, you can migrate host applications to the Web quickly and add customization at your own pace.

### **Improve your graphical user interface**

HATS can add drop-down lists, tables, radio buttons, tabbed folders and much more to your host screens. Users can click PF keys with the mouse instead of being required to use the keyboard. Or they can click the word that describes the key's function, such as clicking the word Help when they need assistance. Users can go to input fields with the mouse instead of having to use tabs or arrow keys to navigate the screen. Your users can point and click their way through your entire host application—just like on the Web. With IBM WebSphere Host Access Transformation Services, users of your legacy applications will have the same type of experience that they have using other Web applications.

### **Improve presentation with HTML**

Not only can HATS make your graphical user interface more functional, it can also improve its appearance. Adding HTML to your host screens is easy—from logos and graphics to pictures and backgrounds. With HATS, you can give your host applications the same look and feel as your Web applications. You can add Web links along the side of your screen or anywhere else you like. You not only have the power to design screens how you choose, you can present your business in a way that is professional and appropriate, rather than being constrained by the presentation of your legacy applications.

### **Rules-based transformation engine**

The power of HATS lies in its ability to accurately recognize one or more host screens and transform them in real time to a Web interface, according to a set of predetermined rules. A collection of default rules is included with the product. It is easy to modify these rules according to your specific needs and tastes.

HATS allows you to assign different rule sets to different end-user communities. You can give a single host application a variety of looks that are appropriate for different user groups. Alternatively, you can use a single rule set on different applications, which will enable you to reuse your work across multiple legacy applications.

HATS Studio includes a variety of options, or widgets, to transform host-screen elements into HTML screen components. Widgets include drop-down lists, radio buttons, hot-link lists, button tables and bar graphs. You can also customize these widgets or create your own to meet your specific requirements.

HATS macro support lets you provide programmed navigation through multiple legacy screens. For example, you can take your end users directly to the first screen they need to see, bypassing all screens in between. Or you can combine data from multiple host screens, as well as multiple data sources, into a single HATS screen. HATS macros are easy to generate and allow you to streamline user interactions with host applications. HATS can also use macros created in IBM WebSphere Host On-Demand or IBM WebSphere Host Publisher.

### **Creates Web services from programmed navigation of host applications**

HATS, in conjunction with WebSphere Studio, helps simplify the creation of standard Web services interfaces to provide access to host applications. Web services protocols, such as Simple Object Access Protocol (SOAP) and Web Services Description Language (WSDL), are an efficient and reusable means to provide standardized access to your host systems, helping you lower the cost needed to maintain and deploy connectors to these systems.

### **Enterprise portals**

Portals are becoming increasingly popular as a way to provide maximum flexibility with a minimum of screen space. IBM WebSphere Portal provides a personalized, single point of access to enterprise information. HATS is able to run directly in the WebSphere Portal environment and to take advantage of integration with other portlets in the portal. Features such as click-to-action and cooperative portlets allow for higher levels of productivity by sharing data between portlets. Credential vault and Web Express Logon support can allow users to simplify the process of signing on and providing credentials to multiple applications. HATS works with IBM Tivoli® Access Manager or other third-party products to provide support for Web Express Logon.

### **Security functions and scalability with WebSphere Application Server and WebSphere Portal**

HATS offers a broad range of security features, in addition to leveraging the security provided by IBM WebSphere Application Server and WebSphere Portal. Secure Sockets Layer (SSL) and Secure HTTP (HTTPS) provide security between the host application, the mid-tier server and the end user. HATS will appear as a typical user to your host applications, allowing you to take advantage of existing access security systems, such as IBM Resource Access Control Facility (RACF®).

The runtime components of HATS are generated by the HATS Studio and deployed to WebSphere Application Server or WebSphere Portal. The WebSphere platform provides support for the workload management features required for enterprise-class scalability and availability. Load balancing and fail-over support functions, such as vertical and horizontal cloning, are handled by the WebSphere Workload Manager. Vertical cloning allows requests to be distributed across multiple Java™ Virtual Machines (JVMs), providing fault tolerance. If one JVM fails, a user request can be processed by one of the remaining clones.

### **Printing and keyboard support**

Local print support is an important capability when extending legacy applications to new users, and HATS delivers this support in an innovative and user-friendly way. HATS converts legacy print output into industry-standard PDF format. The PDF file is then sent to an end-user's browser, where it can be viewed, printed locally or saved to disk.

HATS offers native keyboard support to allow users to continue to use the keyboard functionality to which they have become accustomed. Although running in a browser environment, HATS provides direct keyboard support for functions employed by the host application, such as PF keys, enter keys, clear keys and system-request keys.

### **Efficient session pooling**

HATS provides the ability to create connection pools, which can be used at run time to cache connected, logged-on and established host connections. A predefined number of connections can remain active in the pool, supporting requests from any user. This can help eliminate the overhead of establishing a connection, logging on and disconnecting for each host request. You can define the minimum and maximum number of connections in the pool, as well as determine whether HATS should wait for an available connection or create a new, non-pooled connection if all predefined connections are in use.

### **An Eclipse technology-based development environment**

HATS Studio is fully integrated within Eclipse technology-based IBM WebSphere Studio. It offers an intuitive interface and easy-to-use wizards for customizing the rules for transformation of legacy screens. The Eclipse platform is an industry-standard application development environment, providing the benefits of a common framework and reusable skill set for development of Web-based applications. Integration within WebSphere Studio delivers a common tooling family for your e-business needs. WebSphere Studio application development features provide a variety of additional benefits, such as team development facilities that enable code management across multiple developers.

HATS integrates with WebSphere Studio, which provides a flexible and extensible environment in which to integrate screens and data from multiple host applications with Java technology-based applications to create new WebSphere applications. Transactions with host systems can be encapsulated into reusable business objects, such as Web services, JavaBeans™ and Enterprise JavaBeans™ (EJB™). HATS and WebSphere Studio wizards can be used to create Web pages that call these new business objects. These Web pages can use traditional Model 1, or the newer, open-standards Struts standard for Model 2-based Web pages. WebSphere Studio wizards can also be used to create SQL queries and business objects (Web services, JavaBeans or EJB) to execute these SQL queries.

**An extensible solution with HATS open architecture**

Out of the box, HATS is a powerful tool. But HATS benefits are not limited to just improving your graphical user interface. Because it's built on industry-leading WebSphere software using Java 2 Platform, Enterprise Edition (J2EE™) architecture, HATS has virtually unlimited flexibility and extensibility. Using custom Java development, you can extend HATS to integrate with other legacy systems or J2EE applications. For example, you can use EJB to add business logic to a HATS

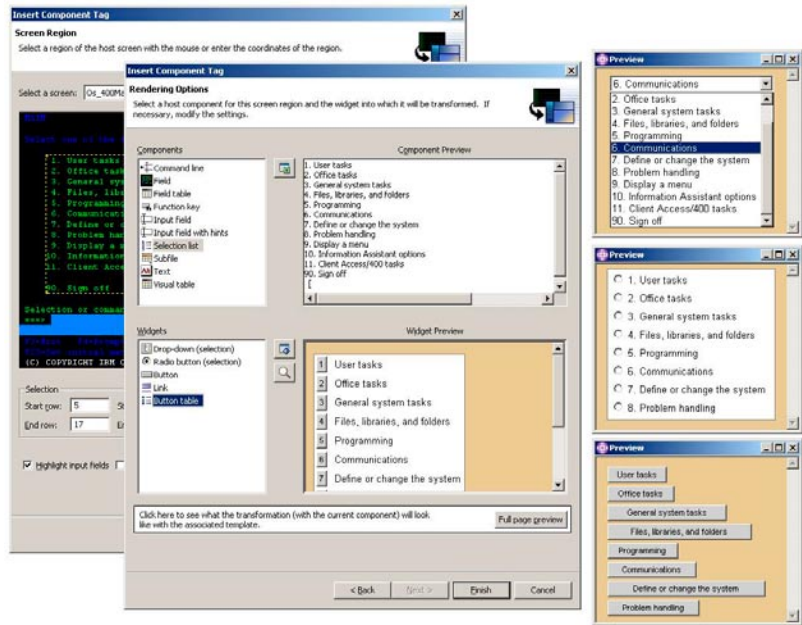


Figure 2. WebSphere Host Access Transformation Services Studio lets you quickly and easily customize your host applications

project. Or you can use the functions found in IBM WebSphere Host Publisher to transfer data from one application to another. HATS also supports global variables, allowing you to streamline your applications and reduce the amount of input required by your end users. With additional customization, global variables provide further capabilities for moving data between your host application and other applications and databases. HATS open architecture provides almost unlimited flexibility for improving the productivity of your host applications.

**Get on the Web quickly**

When you begin a HATS project, a wizard prompts you for basic information, such as the host address. You then select a template for the project. In HATS terminology, a “template” is an HTML file that serves as the background for all your screens. You can choose one of the templates included with HATS, or you can choose to use your own HTML file by dragging and dropping HTML elements such as logos, graphics, animations or Web links to create a new customized template. You can also choose not to use a template—for example, you might want HATS to look like a traditional emulator. After choosing your template, you can deploy the project to either WebSphere Application Server or WebSphere Portal.

Your host application can now be delivered as HTML to your users' Web browsers. All your screens are converted on the fly according to HATS default rules. Your menus and lists are displayed as hot links, and your input fields as HTML text input boxes. Your PF keys are buttons, with only the active ones displayed, and your logos and graphics appear as they would on any other Web page.

### **Customize at your own pace**

After you have deployed your host application, you may decide to add customization to the project. HATS gives you the ability to select individual screens or groups of screens to be uniquely customized. Because HATS is rules-based, a set of rules that you create to customize a single host screen can easily be applied to numerous screens that share similar customization requirements. So although you may create just a few rule sets, you can customize an unlimited number of screens according to these rules. HATS allows you to spend time on the high-traffic and high-value screens—the screens where most of the action and most of the value resides in your host application. Other screens can be converted to a graphical user interface according to the project's default rules.

Your rule sets can be created with HATS easy-to-use graphical studio tools. To create a rule set, you simply select the HATS option for the topic you want to work with on the screen—like a selection list. And select the option that describes how you want HATS to transform that screen element if it is found—convert it to an option list, for example (see Figure 2). You can also insert HTML elements, such as graphics and Web links, in any rule set.

HATS offers tremendous flexibility for extending your Web-to-host implementation over time. One significant advantage of HATS is that you need to invest only minimum time and resources to get started. You can use HATS to quickly deploy your legacy applications to the Web and deliver immediate value to your business. Later, you can add user productivity enhancements at your own pace. Unlike other customization software, HATS does not require you to customize each screen. HATS uses the default rules to convert any unassigned host screens to graphical user interfaces, while customizing all assigned screens according to the rule sets you have created. Therefore, HATS will not break down if you make changes to the host application.

### **Boost productivity, help reduce training costs**

Training new users on host applications costs time and money. Today's mobile workforce often does not have the time or inclination to learn to navigate complex legacy systems. Your business partners and customers want a familiar interface on which they can become productive right away. HATS allows you to present them with a graphical interface that makes your company look modern and up-to-date.

Host applications are performing mission-critical roles in your organization. With a little help on the front end, they can continue to be valuable contributors for many years. Why replace your legacy applications when all you need to replace is your graphical user interface? With a minimum of time and resources, IBM WebSphere Host Access Transformation Services can help rejuvenate your host applications, allowing your organization to continue to benefit from its substantial investment in legacy systems for years to come.

**IBM WebSphere Host Integration solutions**

IBM WebSphere Host Access Transformation Services is part of the market-leading IBM Host Integration family of host access and Web-to-host solutions. HATS complements WebSphere Host On-Demand and is available both within the IBM WebSphere Host Integration Solution or as a stand-alone solution.

**WebSphere software platform: Building on a firm foundation**

IBM WebSphere Host Access Transformation Services is part of the IBM WebSphere software platform—a comprehensive set of integrated, award-winning e-business solutions. No matter where you are in the e-business cycle, the WebSphere software platform can allow you to grow—at the speed the market demands. Building on this robust platform, you can connect diverse IT environments to maximize your current investments and leverage existing skills. Deliver your core business applications to the Web using industry standards like Java technology, XML and Web services. And create next-generation applications that differentiate you from the competition. Advance to a powerful platform for integrated e-business—the WebSphere software platform.

**For more information**

To learn more about IBM WebSphere Host Access Transformation Services, visit:

**ibm.com**/software/webservers/hats

To learn more about how the IBM WebSphere software platform can help you succeed in e-business, contact your IBM representative, IBM Business Partner or visit:

**ibm.com**/websphere



---

## IBM WebSphere Host Access Transformation Services, Version 5.0 system requirements at a glance

---

### HATS Studio requirements

---

- Intel® Pentium® II processor or higher, 500MHz or faster (Pentium III with 1GHz recommended)
- A minimum of 384MB of RAM (512MB of RAM recommended)
- 200MB direct access storage device (DASD) (1GB recommended)
- A high-resolution display with a minimum screen resolution of 1024x768
- Microsoft® Windows® 2000 Professional Server or Advanced Server with Service Pack 3 or Windows XP with Service Pack 1a

#### *One of the following WebSphere Studio installations:*

- WebSphere Studio Site Developer, Version 5.1
- WebSphere Studio Application Developer, Version 5.1
- WebSphere Development Studio Client for iSeries, Version 5.1
- WebSphere Development Studio Client Advanced Edition for iSeries, Version 5.1
- WebSphere Application Server - Express, Version 5.0.2

### HATS server run-time requirements

---

HATS-generated applications run on Windows NT®, Windows 2000, Windows 2003, IBM AIX®, IBM OS/400®, Sun Solaris operating environment, IBM OS/390®, IBM z/OS®, Linux for Intel and Linux for IBM @server® zSeries® servers. HATS applications are deployed to WebSphere Application Server and must meet its software requirements.

*Each deployed HATS application requires additional disk space. The minimum disk space required for each HATS application is:*

- Windows NT, Windows 2000: 40MB
- Windows 2003 Server: 40MB
- IBM AIX: 32MB
- Solaris: 21MB
- OS/400: 21MB
- IBM OS/390 and z/OS: 40MB
- Linux for Intel: 40MB
- Linux for zSeries: 40MB

### One of the following WebSphere Application Servers:

---

- IBM WebSphere Application Server, Version 5.0 with the latest PTFs
- IBM WebSphere Application Server Network Deployment, Version 5.0 with the latest PTFs
- IBM WebSphere Application Server for iSeries, Version 5.0 with the latest PTFs
- IBM WebSphere Application Server Network Deployment for iSeries, Version 5.0 with the latest PTFs
- IBM WebSphere Application Server Express, Version 5.0 with the latest PTFs
- IBM WebSphere Application Server - Express for iSeries, Version 5.0 with the latest PTFs
- IBM WebSphere Application Server for z/OS and OS/390, Version 5.0 with the latest PTFs

#### *Supported browsers:*

- Windows
- Netscape 6.2 or later, Internet Explorer 5.5 or later, Mozilla 1.2.1 or later, Opera 5.0 or later
- AIX requires: Netscape 7.0 and later, Mozilla 1.2.1 and later
- Solaris requires: Netscape 7.0 and later, Mozilla 1.2.1 and later
- Linux requires: Opera 5.0 and later, Konqueror 3.1 and later, Mozilla 1.2.1 and later
- Macintosh requires: Safari 1.0 and later, Internet Explorer Version 5.5 and later, Netscape 7.0 or later

#### *Others:*

- 5250 Print support requires IBM iSeries Access for Web Version 5.2 (**Note:** This is available as part of the iSeries Access Family, Version 5.2).
  - Portal development support requires IBM WebSphere
  - Portal Toolkit Version 5.0 with latest service level
  - WebSphere Portal Version 5.0 is required for deployment of HATS Version 5 portlets
-

---

## IBM WebSphere Host Access Transformation Services features at a glance (continued)

---

### Back-end data sources

---

Supports 3270, 5250 and VT-accessible applications through any Telnet (TN) server

### Performance and scalability

---

Provides load balancing and failover functions through exploitation of WebSphere Application Server, Version 5.0 workload management capabilities

### Compatibility and usability

---

- Supports IBM WebSphere Application Server, Version 5.0
- Integrates with WebSphere Studio, WebSphere Application Server and WebSphere Portal
- Delivers HTML directly to the desktop with zero-footprint and zero-download
- Merges data from various sources into a single Web interface
- Provides on-the-fly rejuvenation of 3270 and 5250 screens
- Supports data objects from VT hosts
- Supports macros and global variables for increased end-user productivity
- Enables new business logic using industry-standard Java development tools
- Supports Struts-based development, allowing the creation and modification of Java ServerPage (JSP) based Web transactions using Struts Model 2 development
- Provides a load-and-go HTML emulator
- Employs an Eclipse technology-based studio that plugs into IBM WebSphere Studio
- Generates industry-standard J2EE applications
- Delivers legacy content as new enterprise portal content
- Provides J2EE technology-compliant Web application development and deployment
- Creates Web services from programmed interaction of one or more host applications
- Creates HTML pages, which can be enhanced using WebSphere Studio (included) or any other industry-standard HTML editor
- Provides an extensible J2EE architecture, allowing virtually unlimited customization and integration
- Supports single sign-on using Tivoli Access Manager

### Security

---

- 128-bit data encryption (RC/2; RC/4; Data Encryption Standard, or DES; and Triple DES)
  - SSL 3.0 support (X.509 certificate)
- 



© Copyright IBM Corporation 2003

IBM Corporation  
Software Group  
Route 100  
Somers, NY 10589  
U.S.A.

Produced in the United States of America  
12-03  
All Rights Reserved

AIX, the e-business logo, @server, IBM, the IBM logo, iSeries, OS/390, OS/400, z/OS, zSeries, RACF and WebSphere are trademarks of International Business Machines Corporation in the United States, other countries or both.

Intel and Pentium are registered trademarks of Intel Corporation in the United States, other countries or both.

Microsoft, Windows and Windows NT are trademarks of Microsoft Corporation in the United States, other countries or both.

Java and all Java-based trademarks and logos are trademarks of Sun Microsystems, Inc. in the United States, other countries or both.

Other company, product and service names may be trademarks or service marks of others.