



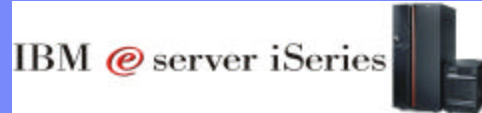
IBM eServer™ iSeries™

## Modernize your green screen applications

### WebSphere Host Publisher

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## Agenda

### WebSphere Host Publisher

- Overview
- Skills / Education
- Packaging / Ordering
- System requirements

#### Abstract:

WebSphere Host Publisher: Modernize Your Green Screen Applications!

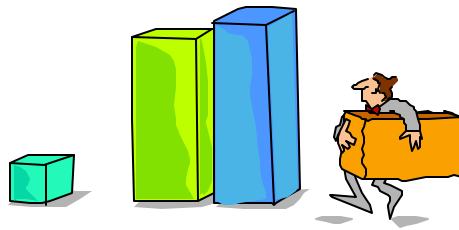
Did you know that WebSphere Host Publisher is included in the iSeries Access Family product?

WebSphere Host Publisher is a tool you can use to reface and streamline those tired-looking green screen applications into truly web-looking applications without changing your original 5250 application -- you don't even need the source code nor do you need a great deal of programming skills!

This product eliminates PC network administration and desktop configuration as everything runs on the iSeries and only sends HTML to the browser. You will also hear how Host Publisher compares to other IBM refacing tools. By the end of this session, attendees will be able to:

1. Understand the capabilities of Host Publisher.
2. See how to use them in an iSeries network.
3. Know what steps to take next in order to start using it

## Packaging



## iSeries Access Family - Packaging

<b>V5R2</b> <b>5722-XW1</b> <b>iSeries Access Family</b>	<b>V5R1</b> <b>5722-XW1</b> <b>iSeries Client Access Family</b>
<ul style="list-style-type: none"> <li>5722-XE1, V5R2 iSeries Access for Windows</li> </ul>	<ul style="list-style-type: none"> <li>5722-XE1, V5R1 AS/400 Client Access Express for Windows</li> </ul>
<ul style="list-style-type: none"> <li>5722-XH2, V5R2 iSeries Access for Web</li> </ul>	<ul style="list-style-type: none"> <li>5722-XH1, V5R1 iSeries Access for Web</li> </ul>
<ul style="list-style-type: none"> <li>5724-B81, V4.0 WebSphere Host Publisher</li> </ul>	<ul style="list-style-type: none"> <li>5648-E25, V3.5 WebSphere Host Publisher</li> </ul>
<ul style="list-style-type: none"> <li>Starting 6/30/2003 HATS Limited Edition</li> </ul>	
	Customers with Software Subscription can get V5R2 clients by ordering no-charge Feature No. 2645 of Product No. 5722-XW1
After 6/30/2003, current V5R2 customers can get version of Host Publisher that runs on WAS V5 and HATS LE by ordering no-charge Feature No. 2646 of Product No. 5722-XW1	After 6/30/2003, current V5R1 customers can get version of Host Publisher that runs on WAS V5 and HATS LE by ordering no-charge Feature No. 2646 of Product No. 5722-XW1

## Differences iSeries Access for Web VS HATS LE



## iSeries Access for Web provides many functions besides 5250...

### My Personal Folder

#### Print

- Printer output
- Printers
- Internet Printers
- Printer shares
- Output Queues

#### Database

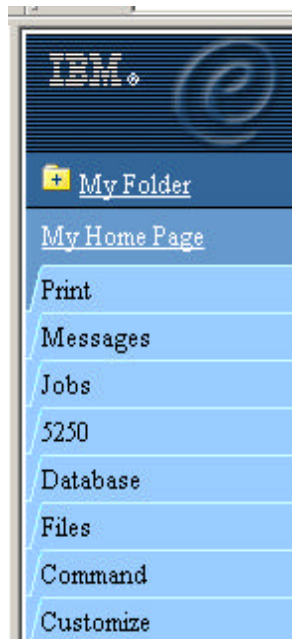
- Tables
- My Requests
- Run SQL
- Copy Data to Table
- Import Requests

#### 5250 ★

- Start 5250 Session

#### Commands

- Run commands (Batch)



#### Files

- Browse Files (in IFS)
- File Shares (in NetServer)

#### Messages

- Display Messages
- Send Messages
- Operator Messages
- Message Queue

#### Jobs

- User Jobs
- Server Jobs

#### Customize

- Administrator controls access to functions by user or group of users:
  - Can customize front page
  - Can limit what tasks can be performed

## We will look only at differences between the 5250 interface here...

The iSeries Access Family now provides two unique ways to start a 5250 session to an iSeries.

### 1. Access for Web

- Product 5722-XH2, refreshed in V5R2, and runs on both V5R1 and V5R2 iSeries servers
- Includes a new, integrated, and improved 5250 emulation function.

### 2. HATS LE

- Offers 5250 emulation that is quick and easy to set up and define
- Runs on both V5R1 and V5R2 iSeries servers.



So now you may be wondering which one to use.

## Differences - iSeries Access for Web vs HATS LE

Access for Web (5250 emulation)	HATS LE (5250 emulation)
<p><b>If using many other Access for Web functions</b></p> <ul style="list-style-type: none"> <li>Can select 5250 or other functions from the Navigation Bar. Less set-up to simply select 5250 tab for emulation needs than to also install/set up HATS LE</li> </ul>	<p><b>Better is only want 5250 session</b></p> <ul style="list-style-type: none"> <li>If the only function you want to make available to users is 5250 emulation, then it would be easier to use HATS LE as that is all the only function it provides. Its Configuration Wizard is easy and quick to set up.</li> </ul>
<p><b>Can connect to multiple iSeries</b></p> <ul style="list-style-type: none"> <li>End user can easily configure multiple 5250 sessions to multiple iSeries servers.</li> <li>For HATS LE, the Administrator must go through special setup to enable users to access multiple iSeries servers.</li> </ul>	<p><b>One customization applies to all users</b></p> <ul style="list-style-type: none"> <li>You only need to go through the customization once and it applies to all users connecting to that instance of HATS LE.</li> </ul>
<p><b>Better Browser Back/Forward control</b></p> <ul style="list-style-type: none"> <li>Access for Web ensures that users do not get out of sync with their OS/400 applications when using the browser back and forward buttons.</li> <li>HATS LE requires the administrator to insert a script into the HATS application template to disable use of the browser Back button to avoid unpredictable results.</li> </ul>	<p><b>Function Keys work with Netscape too</b></p> <ul style="list-style-type: none"> <li>HATS LE enables Netscape users, as well as Internet Explorer users, to work with keyboard Function keys, etc</li> <li>Access for Web only supports use of Function Keys and page up/down when using Internet Explorer.</li> </ul>
<p><b>Includes Macro support</b></p> <ul style="list-style-type: none"> <li>The macro support can be used to eliminate the entering of repetitive commands or even bypass the second sign-on screen.</li> <li>HATS LE has no macro support</li> </ul>	<p><b>Rules-based transformation capabilities provide a more enhanced GUI-look</b></p> <ul style="list-style-type: none"> <li>All system screens and application screens can have drop down lists. HATS LE can detect selection lists and tables and provide an enhanced GUI look not possible with Access for Web 5250 emulation.</li> </ul>
	<p><b>Templates included</b></p> <ul style="list-style-type: none"> <li>Sample templates included, and are easy to modify.</li> </ul>

## Notes: Differences Access for Web Vs. HATS LE

The iSeries Access Family now provides two unique ways to start a 5250 session to an iSeries.

1. Access for Web (Product 5722-XH2, refreshed in V5R2, and runs on both V5R1 and V5R2 iSeries servers) now includes a new, integrated, and improved 5250 emulation function.
2. HATS LE offers 5250 emulation that is quick and easy to set up and define.

So now you may be wondering which one to use. Here might be a few points to help you with these choices:

### Access for Web

- iSeries Access for Web provides many functions in addition to 5250 emulation, ie, work with spool files, printers, database, IFS, commands, etc. HATS LE provides 5250 emulation only -- no other functions.
- So this comparison is just of the 5250 emulation portion.

### Access for Web 5250 emulation

- If you're using the Access for Web default menus and its Navigation Bar, where the 5250 tab is included, it is probably more straight-forward to simply use the 5250 tab for your 5250 emulation needs .
- Access for Web 5250 emulation GUI and keypads can be customized for specific users or groups of users - whereas HATS LE's configuration applies to all users connecting to that instance of HATS LE. Thus, Access for Web provides the flexibility of enabling users to make different choices for their GUI look.
- Access for Web 5250 emulation allows an end user to easily configure multiple 5250 sessions to access multiple iSeries servers. HATS LE would need to be deployed and running in multiple instances of WAS to enable users to access multiple iSeries servers.
- Access for Web 5250 emulation provides macro support; HATS LE does not. The macro support can be used to eliminate the entering of repetitive commands or even bypass the second sign-on screen.
- Access for Web ensures that users do not get out of sync with their OS/400 applications when using the browser back and forward buttons. HATS LE requires the administrator to insert a script into the HATS application template to disable use of the browser Back button to avoid unpredictable results.

## Notes: Differences Access for Web Vs. HATS LE

### HATS LE 5250 emulation

- If the only function you want to make available to users is 5250 emulation, then it would be easier to use HATS LE as that is all the only function it provides, and its Configuration Wizard is easy and quick to set up.
- You only need to go through the customization once and it applies to all users of HATS LE.

However, if you had multiple iSeries servers you would like to have users connect to, or you would like a different look for some users versus other users, then you need to do some additional steps.

The first alternative would be to create multiple instances of WAS on the iSeries server and deploy HATS LE to each of those instances and configure each deployment to connect to a different iSeries server. From the end user view, they would need to specify a different port in the browser URL because each instance of WAS that was created would use a different HTTP server...which requires a different port.

The second alternative is set an override within the HATS LE configuration file (application.hap). It can be updated with an override value like this:

```
<class name="com.ibm.hats.SessionOverride">
<setting name="host" value="true"/>
</class>
```

The "host" setting allows you to pass in the name of the server to connect to. The browser URL would look like this:

```
http://<servername>/HATSLE/entry?host=<servername to connect to>
```

So from one deployment, update application.hap file, the user can connect to different iSeries servers.

Note: Setting this override value is not surfaced in the HATS LE configuration wizard GUI so it can only be done by updating the application.hap configuration file.

- HATS LE, with its rules-based transformation capabilities, can provide a more enhanced GUI-look for system screens as well as host applications than the Access for Web 5250 emulation function. For example, all system screens and application screens can have drop down lists. HATS LE can detect selection lists and tables and provide an enhanced GUI look not possible with Access for Web 5250 emulation.
- HATS LE enables Netscape users, as well as Internet Explorer users, to work with keyboard PF keys, etc, while Access for Web only supports use of PF and page up/down keys when using Internet Explorer.

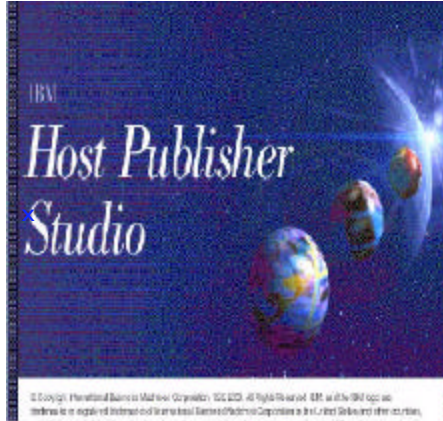
### Combining use of HATS LE 5250 with Access for Web

- You could combine the use of the two products by using the Access for Web Customization functions. This would enable users to come to the Access for Web front page, and click on a link and transparently be switched to use the 5250 emulation program in HATS LE.
- Both HATS LE and Access for Web 5250 emulators use the OS/400 TELNET function - thus both require 5250 OLTP (interactive feature).

All other functions of Access for Web are working with spool files, printers, database, running commands, etc, run batch.



## WebSphere Host Publisher



### ***A cross-server product***

***Use your Host Publisher skills to work with iSeries and zSeries applications...***

***Included with iSeries Access Family (5722-XW1) at no additional charge...***

## Notes: WebSphere Host Publisher

Over the last several years, many products and technologies have been introduced to help extend legacy (typically 3270 and 5250 based) applications and data to a web browser or Java interface. Early solutions typically involved a fairly large Java applet being downloaded to a workstation. Others relied upon an HTML page and HTTP server mode of operation to provide the equivalent of a 5250 or 3270 emulation session. The products have matured and there are numerous options available.

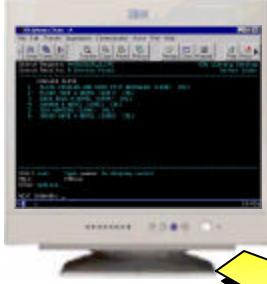
Despite the gold rush mentality on getting to the web, providing a browser interface over a heavily interactive application may not be suitable for the end user, especially when trying to exploit efficiencies by linking more closely to your customers, suppliers and trading partners. These users typically do not have experience with your application, plus have specific, targeted requests such as entering a purchase order or looking up account status. This is especially true in the business to business arena, where application to application integration and automation are important. However, organizations have invested literally billions in existing legacy applications that have been enhanced and solidified over the years. An ideal solution would be to encapsulate these robust legacy application tasks into reusable components that can be used for interactive web applications, as well as enterprise application integration projects for e-business and business to business transactions.

The basic objective of WebSphere Host Publisher is simple - enable an existing 5250 interactive application to participate in the e-business world, without having to do any code modifications. With Host Publisher, you can:

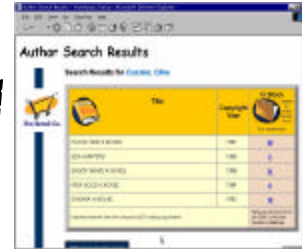
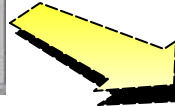
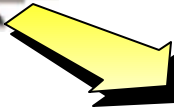
- Utilize the IBM Host Publisher product to provide a browser interface to our application
- Build a Java wrapper layer, or adapter, that provides the data conversion and session management services to interface with the Host Publisher representation of our 5250 application
- Utilize the IBM Connect for iSeries product and its Java connector option to enable an organization to participate in a business to business electronic marketplace, and leverage the strengths of our existing iSeries 5250 based order entry application

You do not need to be an expert Java programmer, or purchase expensive, inflexible middleware from a dotcom vendor that may not be in business in a few weeks, in order to enable your legacy applications to participate in ebusiness opportunities. You can use iSeries Client Access Family, that now includes WebSphere Host Publisher, and be confident that you have a solution that will be long lasting.

## WebSphere Host Publisher



- **Browser-based access**
- **Refaces and streamlines existing green screen applications and system screens**
  - ▶ Existing green screen still available
- **Still interactive but Connections can be pooled**



**Turns host applications into e-business applications for web browser users**

## Notes: Benefits and Business value

### Benefits to Your Programming Staff:

#### Feature/Function

##### They can:

- Implement 'new look-and-feel' applications without needing host application source code
- Work with:
  - 5250/3270/VT host applications
  - Create new Database applications using a variety of JDBC drivers
  - Java Host applications
- Consolidate multiple applications into a single web application
- No programming required, you use the simple graphical wizard-like interface of Host Publisher Studio

#### Business value

##### Your Results:

- Reduces the costs and risks associated with new application development
- Since it is built on WebSphere technology it can be used other Websphere technologies to extend host data to pervasive devices like SmartPhone or personal digital assistants.
- Since it is based on open industry standards, it can be reused in other e-business applications

### Benefits to Your Business:

#### Feature/Function

##### You Can:

- Put a GUI on green screens
- Provide Internet access from any browser supported by WAS
- Support new users inside and outside your enterprise
- Extend the reach of legacy applications and data
  - Streamline navigation through your applications

#### Business value

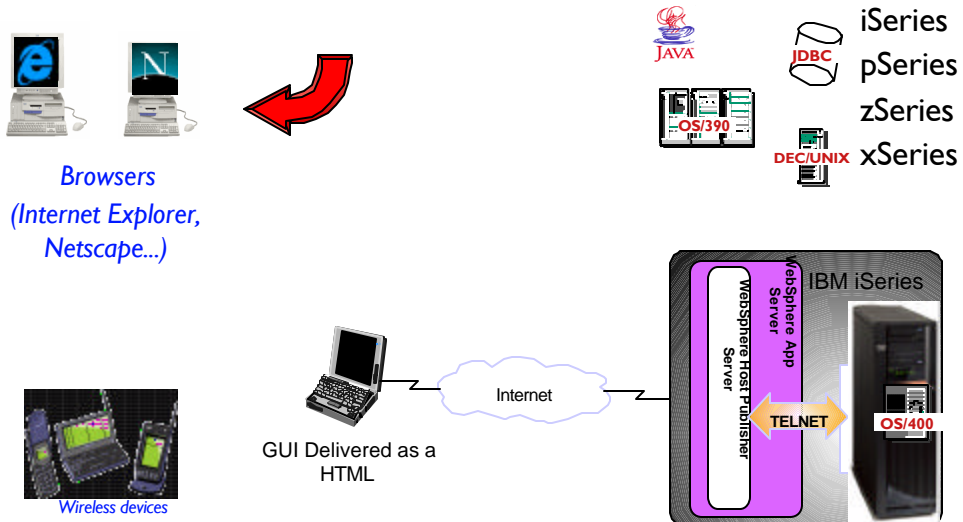
##### Your Results:

- Applications have a modern appearance
- Applications are easier to learn and use
- Lower training costs
- Better responsiveness to your customers
- More information available 24 X 7
- Costly call centers and VRU's are offloaded
- Existing transactions are streamlined

## Server / Desktop Requirements...

Server / Desktop Requirements	WebSphere Host Publisher V4.0 5724-B81	WebSphere Host Publisher V3.5 5648-E25
iSeries HW	• Interactive	• Interactive
Ports	• 80 (HTTP), 443 (HTTPS)	• 80 (HTTP), 443 (HTTPS)
Encryption	• SSL in browser	• SSL in browser
Browser	• Whatever supported by WAS (Netscape, Internet Explorer)	• Whatever supported by WAS (Netscape, Internet Explorer)
Desktops supported	• Any O/S with supported browser -- Windows 95, 98, Me, NT, 2000, XP, Linux, AIX, UNIX, Solaris, Macintosh, OS/2	• Any O/S with supported browser -- Windows 95, 98, Me, NT, 2000, Linux, AIX, UNIX, Solaris, Macintosh, OS/2


## Multi-platform - server, connecting users





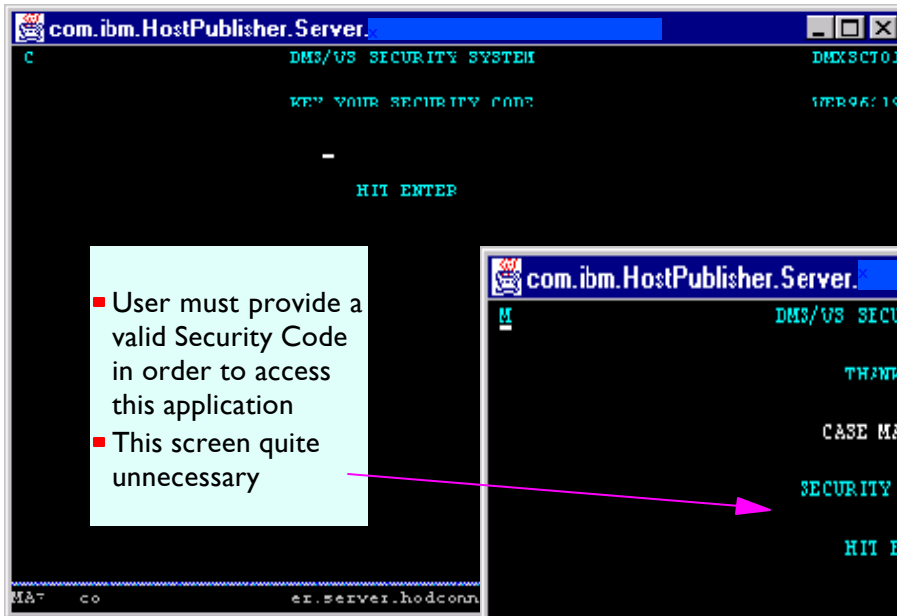
## WebSphere Host Publisher offers many capabilities

*Extend existing applications to the Web...*

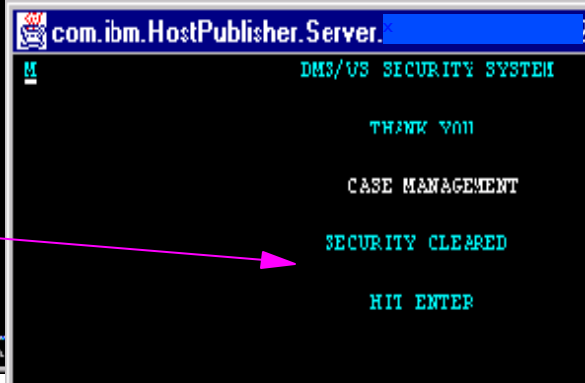
- 1. Modernization done without source code**
  - Host application continues to run as it always has...
- 2. Can Web-enable system screens**
  - Including iSeries commands (such as query a database file)
- **3. Can take an existing full-function, in-house application and present only selected paths to Web users...**
- 4. Can add database functions to existing host application**
  - Can access information from any relational database
- 5. Can combine portions of multiple panels or multiple applications into a single Web view**
  - ▶ 5250, 3270...
- 6. Includes capabilities to control heavy Web use and large networks**
  - ▶ Tools to enhance performance, fallover when Web server not available, manage multiple servers from single administer console
- 7. Cross platform development tool**
  - ▶ Skills invested in Host Publisher can be used with zSeries and iSeries applications as well

*This is a Mainframe Application but could just as well been an iSeries application*

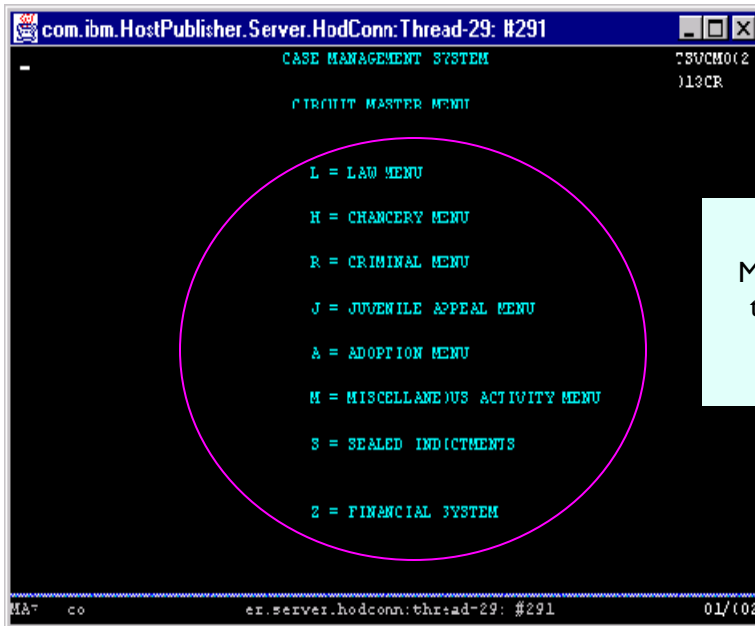
# State of Virginia - Host Application



- User must provide a valid Security Code in order to access this application
- This screen quite unnecessary

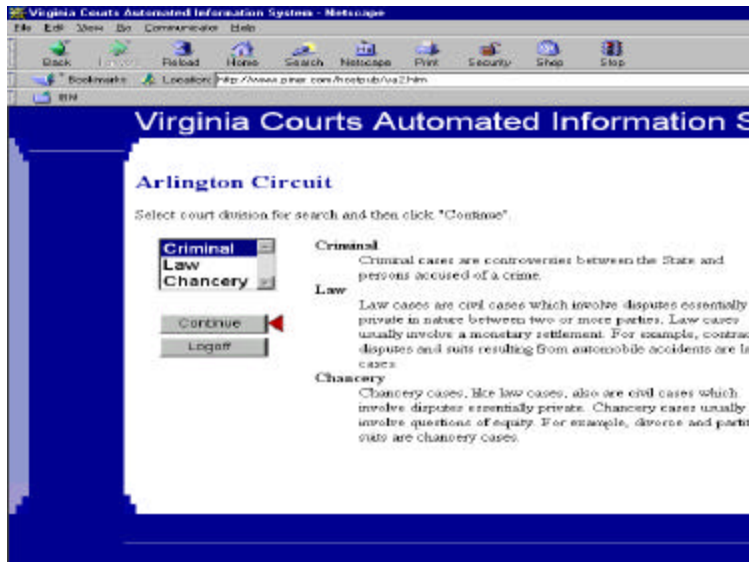


# Case Management System



Multiple paths through this application

## Webized only 3 paths through this existing application



### Note

Order listed changed

- From: Law, Chancery, Criminal
- To: Criminal, Law, Chancery

Several paths through application not included in this view

Check out

<http://www.piner.com> to see this application and others that have been modernized using Host Publisher

## Customer Reference Application - before using Host Publisher

```

Date: 11/05/99          Time: 12:09:21
Dup No. 02 000251303 SHINGLER RAY C & SUSAN L/H&W          RIDGEWOOD CREEK
Parcel                               UNIT 1 LOT 16
Stat A Cls 510  Mtg 3604 CHIMNEY HILL CT                    DR467 P61 VLACD DITCH
By/SI 4/16/96  355 VALPARAISO          IN46383
Drain 30  Conv 2  Bk/Pg 000 000 Inst #                      Tx Sale N BANKRUPT
Property Address --> NO ADDRESS FOUND                      Pre.Dupl. 278560
                                                         New.Dupl. 0
Land-Res  Impr-Res  Land N-R  Impr.N-R  Exempt  Net Value  C.of E.#
96      3430      20230      0      0      3000      20650      0
97      0      0      3430      20230      0      23650      0
98      0      0      3430      20230      0      23650      0
99      0      0      3430      20230      0      23650      0
Mtg  Y N N N  Hmstd Y N N N  Age  N N N N  DisVet  N N N N  Solar N N N N
Rehab N N N N  WW1  N N N N  Bld/dsabl N N N N  Tx Exmpt N N N N
Tax Due  Tax Paid  Date  Penalty  Pen.Paid  Date  Date Appld
96  A  793.42  793.42  5/12/97  .00  .00  0/00/00  6/03  0/00
   Y  B  793.42  793.42  11/10/97  .00  .00  0/00/00  11/13  0/00
97  A  965.59  965.59  5/11/98  .00  .00  0/00/00  5/12  0/00
   Y  B  965.59  965.59  11/10/98  .00  .00  0/00/00  11/18  0/00
98  A  909.92  909.92  5/10/99  .00  .00  0/00/00  5/24  0/00
   Y  B  909.92  .00  0/00/00  .00  .00  0/00/00  0/00  0/00

```

F14-C0 F16-D1 F20-SU

ENTER DUP NO F5-NAME F7-ADDR F9-NOTES F10-PADDR F11-BK/PG F12-RTRN

Porter County Indiana - Tax Details Screen



## Other iSeries Customers using Host Publisher



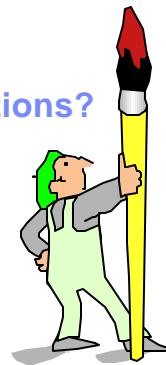
**Kawasaki Motors U.K. supports its dealers and sales force over the Internet with WebSphere Host Publisher**

**Host Publisher saves citizens time while enhancing government efficiency**

Miami-Dade



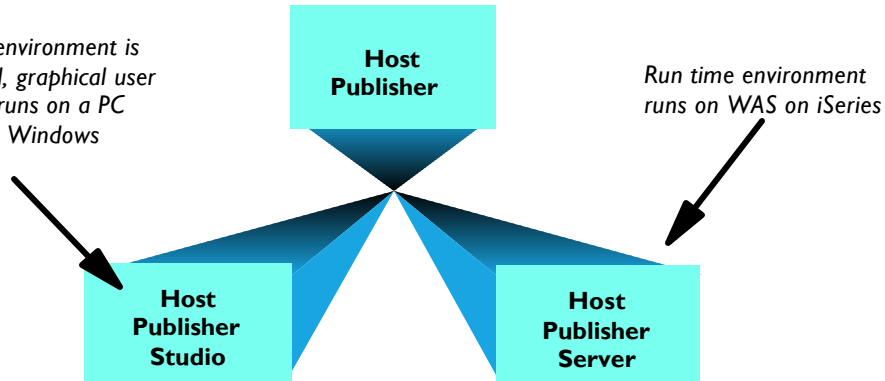
**How Do You Use Host Publisher to modernize your applications?**





## Key Components

Development environment is a task-oriented, graphical user interface that runs on a PC with Microsoft Windows



### Development Environment

- ▶ Uses task oriented, graphical user interface
- ▶ Generates Integration Objects
- ▶ Contains Java bean factories
- ▶ Generates fully customizable Web pages (ie, Java Server Pages)

### Run Time Environment

- Provides session management, license monitoring, run-time administration, load balancing and log and trace management
- Supports SSL encryption and DES encrypted passwords
- Supports integration with other IBM connectors

## Notes: Host Publisher Makeup

Host Publisher is also comprised of two categories of components - development and runtime.

The development component is called the 'Host Publisher Studio'. It is a development toolkit that contains three components:

1. Host access for interacting with 5250 application tasks (entering input, extracting output) and representing them as reusable Java bean components
2. Database access for performing SQL inserts, updates and deletes in conjunction with DB2/400 and representing them as reusable Java bean components
3. An interactive application builder for integrating Java components (host access beans, database access beans, or other Java applications) to build web enabled applications, using Java Server Pages (JSP)

The runtime component is called the 'Host Publisher server'. It uses WAS to provide the runtime support for Host Publisher applications. Host Publisher applications can contain multiple components (ie pieces of several 5250 applications, host screens and DB2/400 queries) from multiple servers (iSeries, mainframes, etc.), and represent these as part of a firewall-friendly, thin client HTTP- and HTML-based solution. All programming logic runs on the server, even the 5250 session management tasks. It is well suited for extending host application functionality over the Internet, without requiring the end user to download large client components or try navigating through an interactive 5250 application. Since the 5250 tasks run on the server and not the browser, you are not trying to 'force fit' a session-based protocol (TN5250) over a sessionless (HTTP) connection. This is an advantage over other HTTP-based products.

Host Publisher provides the following benefits to the iSeries environment:

- Provides Web integration with 5250, Java Database Connectivity (JDBC) and Java host applications without requiring any changes to the existing application itself.
- Allows for easy consolidation of multiple applications into a single composite application or Web page for presentation to Web users
- Includes and integrates with Websphere Application Server and Websphere Studio to provide a comprehensive solution for delivering host data to Web users and to new Websphere e-business applications.
- Works with Websphere Transcoding Publisher to extend host data to pervasive technologies such as SmartPhone devices and personal digital assistants.
- Provides a wide range of host access options: HTML to Web browsers, XML Gateway for Java applications, and reusable Host Publisher Integration Objects for Java applets and applications.
- Helps to leverage your investment in Host Publisher by using integration objects that are based on open industry standards that can be reused in new e-business applications, and reducing the costs and risks associated with new application development.
- Can be implemented without programming, using a simple graphical wizard-like interface.
- Includes IBM Network Dispatcher, which enables the balancing of user network traffic across a pool of Host Publisher servers.

## What are the steps?

- 1. Install/configure Host Publisher Server in WAS**
  - get it ready for use
- 2. Start the WebSphere Host Publisher Studio**
  - Host Access (5250, 3270, VT) or Database Access (JDBC) paths
- 3. Step through the application or host screens -- capturing the information you wish to publish**
  - generates Java beans called Integration Objects
- 4. Import the Integration Objects into the Host Publisher Application Integrator (studio)**
  - generates JSPs and J2EE.ear files
- 5. Perhaps polish your application further**
  - 5. Could use a product in the WebSphere Studio family or other products to enhance the graphical look of the pages
- 6. Install the J2EE files on the application server using WAS Administrator**
- 7. Ready for Web users to enter url to access the application**

## Step 1. Install/configure Host Publisher Server in WAS

get it ready to use

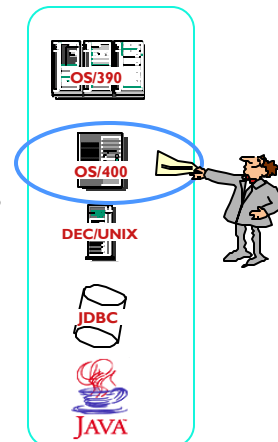
## Server Software Requirements

Product Number	Product Name	Option	\$
57xx-SS1	OS/400 V5R1 or later	Base	w/HW
57xx-SS1	Operating System/400 Host Servers	12	N/C
57xx-SS1	Operating System/400 Qshell Interpreter	30	N/C
57xx-SS1 57xx-AC2 or 57xx-AC3	If you plan to use Secure Sockets Layer (SSL): = OS/400 Digital Certificate Manager – Cryptographic Access Provider (56-bit) or – Cryptographic Access Provider (128-bit)	34	N/C N/C N/C
57xx-DG1	IBM HTTP Server for iSeries		N/C
57xx-JV1	Developer Kit for Java Developer Kit for Java Version 1.2	Base 3	N/C N/C
57xx-JC1	Toolbox for Java		N/C
57xx-TC1	TCP/IP Connectivity Utilities for iSeries		N/C
57xx-XW1	iSeries Client Access Family = WebSphere Host Publisher (5648-E25, V4.0) or – WebSphere Host Publisher (5724B81, V3.5)		\$
5733-AS3 5733-WA3 5733-WS4 5733-WA4	WebSphere Application Server - Standard Edition V3.5 WebSphere Application Server - Advanced Edition V3.5 WebSphere Application Server - Advanced Single V4.0 WebSphere Application Server - Advanced Multi V4.0 <b>Will support WAS 5.0 versions by 6/30/2003</b>		N/C \$ \$ \$

## Host Publisher Ts & Cs



HTML Web browser



**WebSphere Host Publisher is included with iSeries Access Family (5722-XW1):**

- **Production environment must be installed on iSeries servers**
- **Does 'Concurrent' license checking at runtime**
  - **Must have iSeries Access Licensed Program Product (5722-XW1) installed on Server.**
  - **If you have a Processor-based license of 5722-XW1, unlimited number of users could be using Host Publisher, Access for Web Access, and Access for Windows products simultaneously**

## What Comes in Your Package...

### WebSphere Host Publisher Server - CD

- ▶ To be installed on iSeries
- ▶ Host Publisher documentation included on CD
  - Planning and Installation Guide for iSeries
  - Administrator's and User's Guide.

### WebSphere Host Publisher Studio - CD

- ▶ To be installed on Windows 98, Me, NT 4.0, 2000, or XP

Use this for  
Host  
Publisher  
too



Also look at iSeries Access for Web Installation Guide (SC41-5518) and README for additional information on installing and configuring WebSphere Host Publisher.

## Performance Considerations

Performance mainly dependent on WebSphere Application Server

- Minimal network traffic as only generating HTML page
- Run the workload estimator at:
  - <http://www-912.ibm.com/supporthome.nsf/document/I6533356>

Also look at recommended minimum system requirements for WebSphere from above web page



Use First Customer Assist Program to get WAS configured and running

- <http://www-919.ibm.com/servers/eserver/iseries/developer/websphere/assistance.html>

## Notes: First Install Customer Assistance

First Install Customer Assistance for **Websphere Application Server** Standard or Advanced Edition for iSeries or AS/400.

- We would like to welcome new customers to the Websphere arena and provide them with assistance that may be needed to install and configure Websphere Application Server, either Standard or Advanced Edition.
- By starting with a working instance of Websphere Application Server and reviewing the sample programs provided, your time spent with Websphere Application Server will be more productive and enjoyable.
- Through your application and acceptance into this program, the Rochester Support Center will provide you with 8:00AM - 5:00PM Central Standard Time phone support assistance in setting up a Websphere Application Server test environment.

This assistance includes:

1. Documentation clarification
2. Verify you have all Prerequisites available: Software, Hardware, PTF's, and Communication configurations
3. Creation of a default Websphere instance
4. Configuration and enablement of Websphere for an HTTP server
5. Installation and use of Websphere Client based Admin Console (excluded Firewall configuration)
6. Validate the above by running of a sample servlet.

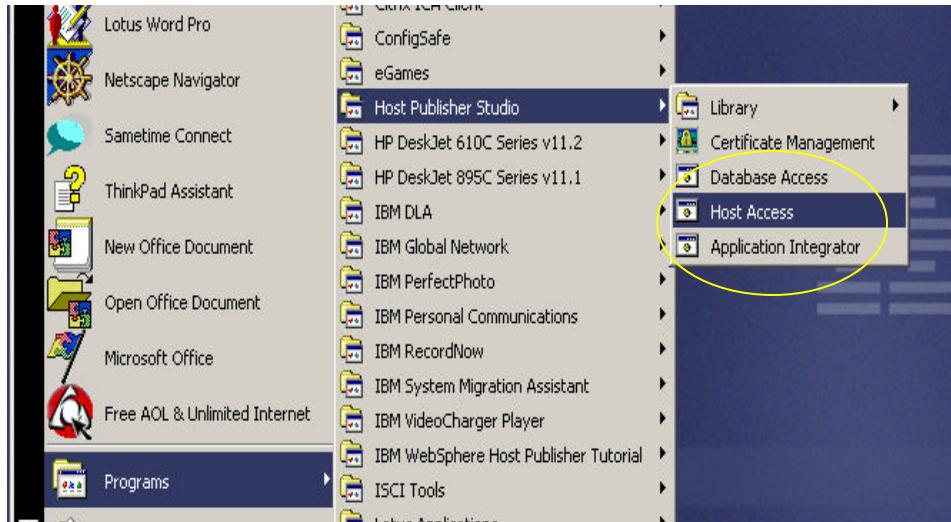
<http://www.iseries.ibm.com/developer/websphere/assistance.html>

## Steps 2-4. Working with the Studio

- 2. Start the WebSphere Host Publisher Studio**
  - Host Access (5250, 3270, VT) or Database Access (JDBC) paths
- 3. Step through the application or host screens -- capturing the information you wish to publish**
  - generates Java beans called Integration Objects
- 4. Import the Integration Objects into the Host Publisher Application Integrator (studio)**
  - generates JSPs and J2EE.ear files



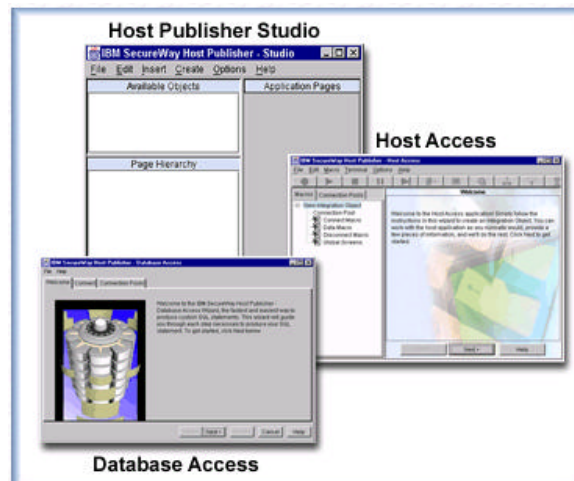
## WebSphere Host Publisher Studio



## Development Environment Components

**Host Publisher Studio** is divided into 3 parts for creating and managing a project

1. **'Host Access'** for your existing 5250 applications
  - Generates JavaBeans called **Integration Objects**
2. **'Database Access'** is used to create new SQL requests
  - Generates **SQL Integration Objects**
3. **'Host Publisher Studio' / 'Application Integrator'**
  - Generates HTML, JSPs, and J2EE ear files

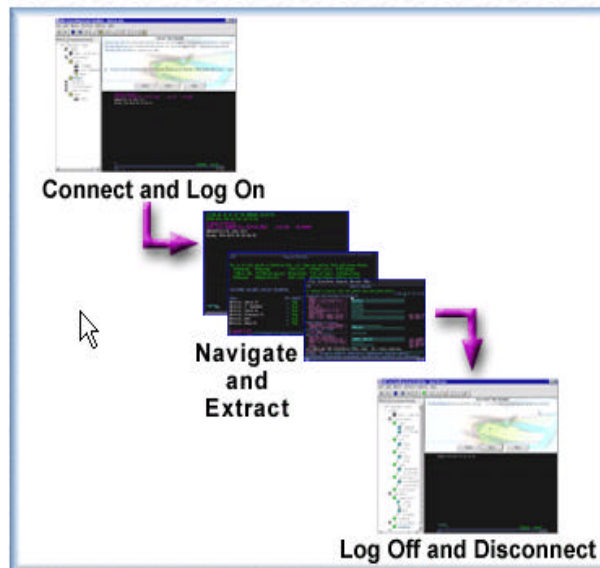


## Notes: Working through the phases...

There are three unique steps you go through when using the 'Host Access' or 'Database Access' functions

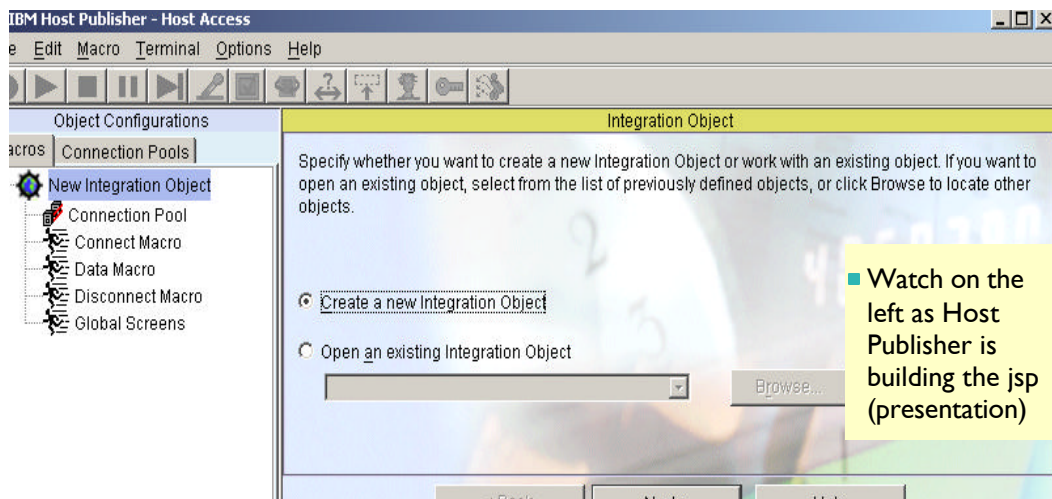
These phases become your interaction macros

1. Connect and log on
2. Navigate and extract data
3. Log off and disconnect



## Working with 'Host Access'...

- To work with an existing 5250 application
- We start by selecting 'Host Access' and start working through the Wizards.
  - ▶ First we define what we're going to do...



## Notes: Host Access

The 'Host Access' component works with existing 5250, 3270, and VT applications or host screens to provide data and functions in a web page



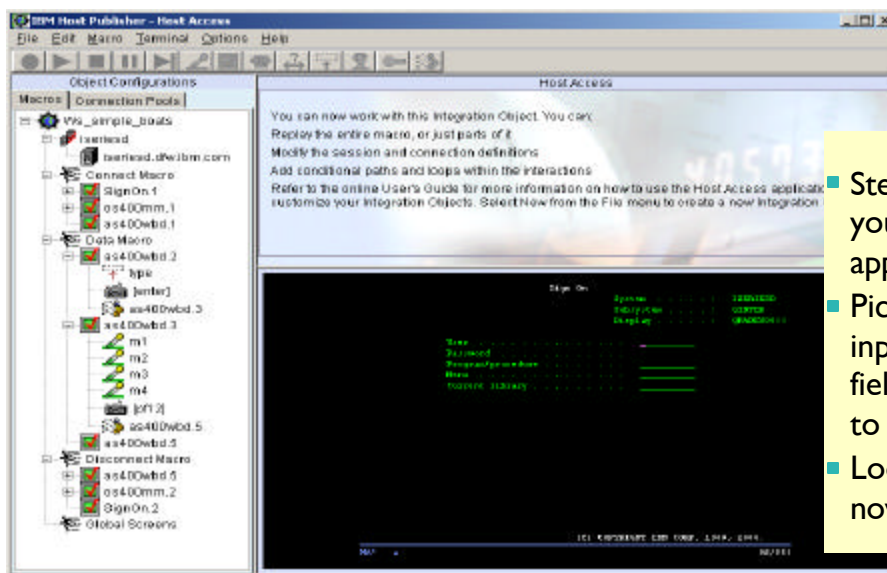
### Host Access interacts with host tasks

- Host 'green screen' applications or system screens (ie, OS/400 screens such as working with spool file)
- Entering input, extracting output
- Represents them as reuseable Java bean components
- Data from multiple host applications or system screens can be combined in a single web page

### Benefits

- Host Publisher hides the complexity of obtaining the data
- No changes to host applications needed!
- Mission critical data can be presented to new users in new ways

## Capturing your screens...



- Step through your application
- Picking the input/output fields you want to display
- Look on left now...

## Telling Host Publisher what fields you want to present...

Data: 11/05/99 Time: 12:08:21

Dup No. 02 00025130 SHINGLER RAY C & SUSAN L/RM RIDGEWOOD CREEK  
 Parcel 3604 CHIMNEY HILL CT UNIT 1 LOT 16  
 Stat A C1s 510 Mh 3504 PARBATSQ TNA6393 DR457 P61 VLKCD DITCH  
 By/SI 4/16/96 3504 PARBATSQ TNA6393  
 Drain 30 Conv 2 BK 000 000 Inst # Sale N BANKRUPT  
 Property Address --> NO ADDRESS FOUND Pre-Dupl. 278560

Land-Res	Impr-Res	Land-N-R	Impr-N-R	Exempt	Net Value	C. of E.#
36	3430	20230	0	3000	23660	0
37	0	0	20230	0	23660	0
38	0	0	20230	0	23660	0
39	0	0	20230	0	23660	0

ENTER DUP NO F5-NAMES F7-ADDR F9-NOTES F10-PRDR F11-BK/P6 F12-R/RM

### Porter County Tax Information

Dupl Number: 25 000039200

Owner Information	Property Address
WILSON ALICE	506 BROQUOIS TR BR
506 BROQUOIS TR BR	CHESTERTON
CHESTERTON IN46304	

Parcel Book 000  
 State A Page 000  
 Chap 510 Instrument Number  
 Mfg 999 Tax Sale N  
 Buy/Sel 000000 Pre Dupl 0  
 Drain New Dupl 0  
 Conty 9

Legal Description  
 INDIAN SPEDITS  
 LOT 28

Tax History:						
Land-Res	Impr-Res	Land-N-R	Impr-N-R	Exempt	Net Value	C. of E.#
36	1870	9370	0	0	3000	3240
37	1870	9370	0	0	3000	3240
38	1870	9370	0	0	3000	3240
39	1870	9370	0	0	4000	7240

Remember that Porter County Application?

## Working through the studio wizards...

IBM Host Publisher - Host Access

Object Configurations  
 Macros Connection Pools

Wls\_simple\_boats  
 iseriesd  
 iseriesd.dtlm.ibm.com  
 Connect Macro  
 SignOn.1  
 \_userid  
 \_password  
 [enter]  
 os400mm.1  
 os400mm.1  
 boats[enter]  
 as400wbd.1  
 as400wbd.1  
 Data Macro  
 as400wbd.2  
 type  
 [enter]  
 as400wbd.3  
 as400wbd.3  
 m1  
 m2  
 m3  
 m4  
 [pf1] 2  
 as400wbd.5  
 as400wbd.5  
 Disconnect Macro

You can now work with this Integration Object. You can:  
 - Replay the entire macro, or just parts of it  
 - Modify the session and connection definitions  
 - Add conditional paths and locales within the interactions  
 Refer to the online User's Guide for more information on how to use the Host Access application to customize your Integration Objects. Select New from the File menu to create a new Integration Object.

SEARCH FOR DATA 6/05/99 23:05:19

Enter search parameters:  
 Type A  
 Length (lenk) 10  
 Year lookto year to start from

14 boats match your search

STANDARD	Type and Description	Year	Year	USD
-	A Boat	18	2399	199,999,999
-	A Boat	19	2400	199,999,999
-	A Boat	20	2400	199,999,999
-	A Boat	21	2400	199,999,999
-	C Boat	18	2479	4,999,999
-	P Boat	28	2479	21,999
-	P Boat	19	2479	21,999
-	P Boat	18	2479	21,999
-	P Boat	17	2479	21,999
-	P Boat	16	2479	21,999
-	P Boat	15	2479	21,999
-	P Boat	14	2479	21,999
-	P Boat	13	2479	21,999
-	P Boat	12	2479	21,999
-	P Boat	11	2479	21,999
-	P Boat	10	2479	21,999
-	P Boat	09	2479	21,999
-	P Boat	08	2479	21,999
-	P Boat	07	2479	21,999
-	P Boat	06	2479	21,999
-	P Boat	05	2479	21,999
-	P Boat	04	2479	21,999
-	P Boat	03	2479	21,999
-	P Boat	02	2479	21,999
-	P Boat	01	2479	21,999

- Continuing through the 5250 application
- Identifying what you want to display...
- Look at left side now...



## Testing and Debugging your web application...

**You can use the Host Publisher Display Terminal function for debugging**

- You can run the 5250 application in its green-screen view right next to your modernized application
- Enables you to see the paths through your 5250 application that your modernized application is going to take.

The screenshot shows two overlapping windows. On the left is a modernized application window titled 'Webcode Sport Club Application' with a list of items and a 'Total cost: \$148.00'. On the right is a 5250 green-screen terminal window displaying tax data for parcel 02 000251303. The terminal output includes:

```

Date: 11/05/99 Time: 12:09:21
Dup No. 02 000251303 SHINGLER RAY C & SUSAN L/H&W RIDGEWOOD CREEK
Parcel UNIT 1 LOT 16
Stat A Cte 510 Mtg 3604 CHIMNEY HILL CT
Buy/SA 4/16/96 355 VALPARAISO IN46303 DR467 P61 VLACD DITCH
30 Conv 2 Bk/Pg 000 000 Inst # Tx Sale N BANKRUPT
ty Address --> NO ADDRESS FOUND Pre.Dupl. 278560
New.Dupl. 0
Land-Res Impr-Res Land N-R Impr-N-R Exempt Net Value C.of E.#
3430 20230 0 0 3000 20660 0
0 0 3430 20230 0 23660 0
0 0 3430 20230 0 23660 0
0 0 3430 20230 0 23660 0
Y N N N Hmstd Y N N N Age N N N N DisVet N N N N Solar N N N N
N N N N W01 N N N N Blind/dsabl N N N N Tx Exmpt N N N N
Tax Due Tax Paid Date Penalty Pen.Paid Date Date Appld
793.42 793.42 5/12/97 .00 .00 0/00/00 6/03 0/00
793.42 793.42 11/10/97 .00 .00 0/00/00 11/13 0/00
965.59 965.59 5/11/98 .00 .00 0/00/00 5/12 0/00
965.59 965.59 11/10/98 .00 .00 0/00/00 11/18 0/00
909.92 909.92 5/10/99 .00 .00 0/00/00 5/24 0/00
909.92 .00 0/00/00 .00 .00 0/00/00 0/00 0/00
F14-CI F16-D1 F20-SH
UP NO F5-NAME F7-ADDR F9-NOTES F10-PADDR F11-BK/P6 F12-RTRN
    
```

## Database Access - select JDBC driver

The screenshot shows the 'IBM Host Publisher - Database Access' dialog box. The 'Connect' tab is active. The 'Database URL' field contains '(dbc:as400)[host]'. The 'User ID' field contains 'cmminer' and the 'Password' field contains '\*\*\*\*\*'. The 'Driver' dropdown menu is open, showing the following options: AS/400 Toolbox for Java (selected), IBM DB2 UDB local, IBM DB2 UDB remote, AS/400 Toolbox for Java, JDBC-ODBC Bridge, Oracle, Sybase, and Other. The 'Other driver' field contains 'com.ibm.as400.access.AS400JDBCdriver'. A 'Connect' button is visible at the bottom right.



## Notes: Database Access

The 'Database Access' wizards are used to create SQL Integration Objects that can access relational databases



### Includes:

- iSeries JDBC driver
- AS/400 Toolbox for Java

The 'Database Access' component is used to create Integration Objects that can access databases

- Supports **any relational database** that provides **JDBC drivers**
- Can access **DBA data** over the network using **JDBC driver in DBA Connect**

Database Access enables you to:

- Perform **SQL inserts, updates and deletes** in conjunction with **DB2 UDB for iSeries**, and
- Represent them as **reusable Java bean components**

## Now use Database Access wizards to built database application...

A screenshot of the 'IBM Host Publisher - Database Access' wizard. The window title is 'IBM Host Publisher - Database Access'. It has a menu bar with 'File', 'Options', and 'Help'. Below the menu bar are three tabs: 'Welcome', 'Connect', and 'Connection Pools'. The 'Welcome' tab is active, showing a 3D illustration of a database server stack on the left. The main text area contains the following text: 'Welcome to the IBM Host Publisher - Database Access Wizard, the fastest and easiest way to produce custom SQL statements. This wizard will guide you through each step necessary to produce your SQL statement. To get started, click Next below.' To the right of the text is a light blue box containing a list of SQL operations that the wizard builds.

- Wizard builds SQL statements
  - Tables
  - Join
  - Condition
  - Columns
  - Sort
  - SQL
  - Insert
  - Update



## Skills / Education



## Skills

### Skills you need to use Host Publisher

- You **must be proficient** with the host application or database
- You will use the Host Publisher Studio wizards to create java objects
  - Do not need to be a Java programmer
- You will use the Host Publisher Studio wizards to build Web pages for the applications
  - Basic JSP knowledge is required to modify the applications



*Host Publisher Studio provides the tools to develop web-enabled applications*

## Skills for building a Web application...

You need to understand the data source well enough to model interactions with the data source (which may be a complex process)

- You need to be able to predict all possible paths, including error paths
- If you are not familiar with the data source, then building the Integration Objects may be a painful exercise with much time spent starting over

You build and test the Integration Objects within the Host Publisher Access User Interface first. You:

- **Model tasks, not screens**
- Identify tasks to be performed
- Build a flow diagram and exercise the diagram
- Allow for error paths (or prevent them effectively)
- Allow for global screens (screens which could appear at any time)

You build pages to complete the application and TEST

- You can customize pages to suit standards.
- Once the application has been thoroughly exercised and tested, you then save the customization of the JSP pages

## Host Publisher - Education

### IBM WebSphere Host Publisher Application Development Workshop

- **Course Code: SW910**
- **For schedule information, call 1-800-IBM-TEACH (426-8322)**



### 'Building A Java Adapter Over a 5250 Application to enable B-B transactions' article

- **An example of taking an interactive 5250 order entry application running on an iSeries machine, and making it accessible via a web browser**

<http://www.iseries.ibm.com/developer/java/topics/hostpubadapter.html>

## Programmer's Guide

- **On Host Publisher Studio CD**

## Assistance

- **eServer Custom Technology Center (CTC)**

## Tutorial on CD

- **Contact Carole Miner for copy**

## WebSphere Host Publisher QuickStart Services



Acrobat Document

- **A comprehensive suite of services to assist customers with the installation and customization of Host Publisher**

- Installation & Connectivity Module - 3 days
- Host Publisher Workshop Module - 5 days
- Host Publisher Remote Consulting Module - 40 hours

## Notes: Host Publisher Education

IBM WebSphere Host Publisher Application Development Workshop (Course Code: SW910) -

this course is for anyone that wants to build Host Publisher applications across a variety of platforms (not just iSeries) and who has basic web application development skills including HTML knowledge and an understanding of the Java programming Language. The focus of this course is on implementing IBM Websphere Host Publisher (Host Publisher) applications using advanced techniques designed to handle a wide variety of application scenarios. Advanced topics will be discussed to give the student in-depth understanding of Host Publisher technology and how to apply this technology to real-world applications. Labs will be used extensively to ensure students can apply the topics discussed. The Host Publisher Application Development Workshop is a technical workshop that will discuss techniques for developing advanced Host Publisher applications.

Duration: 4 Days

Delivery Method: Classroom

Skill Level: Basic

Tuition: \$2200

For schedule information, please call 1-800-IBM-TEACH (426-8322).

## Reference Material (Redbooks, manuals, whitepapers, etc.)

<http://www.ibm.com/software/webservers/hostpublisher/library.html>

### Redbooks

- iSeries Access for Web V5R2 and WebSphere Host Publisher V4.0, SG24-6804-00 on the web at:  
<http://publib-b.boulder.ibm.com/cgi-bin/searchsite.cgi?query=SG24-6804>
- A Comprehensive Guide to IBM WebSphere Host Publisher V3.5, SG24-6281
- New Advanced Functions in IBM WebSphere Host Publisher V2.2: Access Host Applications from Web Devices, SG24-5964-00
- New Advanced Functions in IBM WebSphere Host Publisher V2.2 - Access Host Applications from Web devices, SG24-5964-00
- Building Integration Objects With IBM SecureWay Host Publisher Version 2.1 , SG24-5385-00

### White papers

- IBM WebSphere Host Publisher Version 4.0 Implementation Guide
- ssRTE.exe for use with Lab 1 in Implementation Guide [Executable - 139 KB]
- Setting up and Using the IBM® Express Logon Feature for WebSphere Host Publisher 3.5
- IBM WebSphere Host Publisher Version 3.5 Implementation Guide
- IBM WebSphere Host Publisher [PDF Version- 200KB]
- Using WebSphere Studio with Host Publisher
- Designing an Application Using IBM WebSphere Host Publisher
- Understanding Host Publisher Integration Object Chaining

### Product documentation

- IBM Websphere Host Publisher V4.0 Readme
- IBM WebSphere Host Publisher V4.0 Administrator's and User's Guide
- IBM WebSphere Host Publisher V4.0 Programmer's Guide and Reference
- IBM WebSphere Host Publisher V4.0 Messages Reference
- IBM WebSphere Host Publisher V4.0 Planning and Installation Guide for IBM AIX, Sun Solaris, and Microsoft Windows
- WebSphere Host Publisher V3.5 Application Development: Building Integration Objects for use in Java Server Pages: Lab 1
- WebSphere Host Publisher V3.5 Application Development: Building a Integration Object Chaining Application- Lab 2
- WebSphere Host Publisher V3.5 Application Development: Using Conditional Macros, Error Logic and Global screens - Lab 3
- IBM Websphere Host Publisher V3.5 Readme
- IBM WebSphere Host Publisher V3.5 Administrator and User's Guide (GC31-8728-02)
- IBM WebSphere Host Publisher V3.5 Programmer's Guide and Reference
- IBM WebSphere Host Publisher V3.5 Planning and Installation Guide for Windows NT, Windows 2000, AIX, and Solaris (SC31-8730-03)
- IBM WebSphere Host Publisher V3.5 Planning and Installation Guide for iSeries (SC31-8734-03)

### Key informational websites or links

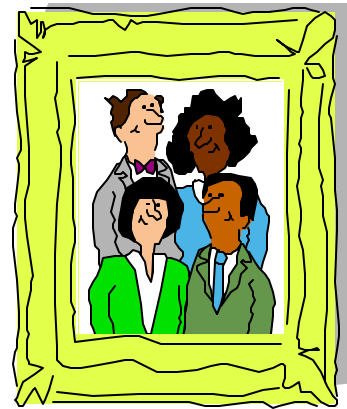
- iSeries Access Family: [www.ibm.com/eserver/iseries/access](http://www.ibm.com/eserver/iseries/access)
- Host Publisher: [www.ibm.com/software/webservers/hostpublisher/](http://www.ibm.com/software/webservers/hostpublisher/)



*pretty as a picture...*

**Step 5.**  
**Perhaps polish your application further**

Could use a product in the WebSphere Studio family or other products to enhance the graphical look of the pages



*First we use the Host Publisher Studio to create our basic Web-to-host application, then we make it 'production ready'*

**To get this kind of look takes an extra step...**

- You will want to use a product like IBM's **WebSphere Studio** products to enhance the presentation of the application

## Notes: Managing Host Publisher Studio-generated JSPs in WebSphere Studio

The following steps describe how to import Host Publisher generated JavaServer pages (JSPs) into WebSphere Studio

### **Create the application with Host Publisher Studio**

1. Install sample application UofMApp1.hpa. Note: UofMApp1 and UofMApp2 are installed together, so you can skip this step if UofMApp2 is already installed.
2. Start Host Publisher Studio from the Start menu.
3. Close the opening Welcome to Host Publisher Studio! dialog box, if it appears.
4. Open the sample application as follows:
  1. From the menu bar, select File > Open Application....
  2. Double-click the UofMApp1 folder in the Open Application File dialog box.
  3. Select UofMApp1.hpa.
  4. Click Open.
5. Click File > Transfer to Server... to transfer the sample application to the Host Publisher Server. Refer to the IBM WebSphere Host Publisher Administrator's and User's Guide for details.
6. Use Host Publisher Server Administration to deploy UofMApp1. This final step makes the application available on the Web.

### **Import the JSPs into your WebSphere Studio project**

7. Start WebSphere Studio from the Start menu.
8. Select Create a new project from the Welcome to IBM WebSphere Studio dialog box. If this dialog box does not appear, click File > New Project... from the menu bar.
9. Type UofM1 as the Project Name, then click OK.
10. Import the Host Publisher Studio-generated JSPs as follows:
  1. From the menu bar, select Insert > File....
  2. Select the Use Existing tab in the Insert File dialog box.
  3. Click Browse and navigate to the x:\HostPub\Studio\UofMApp1 folder.
  4. Press and hold Ctrl, then click inputPage.jsp and outputPage.jsp to select them both.
  5. Click Open, then click OK.

### **Modify the JavaServer Pages within WebSphere Studio**

11. Double-click inputPage.jsp in the File View window to open Page Designer with the selected file.
12. Apply your creativity to enhance the page. When you are done, click File > Save to save the revised file, then click File > Quit to close Page Designer.
13. Repeat the process to enhance outputPage.jsp as desired.

### **Publish the modified JSPs from WebSphere Studio to Host Publisher Server**

Note: Your publishing target must be a Host Publisher Server.

14. Configure WebSphere Studio to publish the JSPs to the correct Host Publisher Server application directory as follows:
  1. Select the Publishing window and expand the publishing stage with which you are working.
  2. Right-click on the server and select Properties from the pop-up menu.
  3. Click Targets... in the Properties dialog box.
  4. Set the html target to the corresponding application directory on your Host Publisher Server target (for example, x:\HostPub\Server\production\documents\UofMApp1).
  5. Click OK to close the Properties dialog boxes.
15. Configure WebSphere Studio to publish files with relative links:
  1. From the menu bar, select Tools > Publishing Options....
  2. Check Relative to parent file for Style of links.
  3. Click OK to close the Publishing Options dialog box.
16. Publish your WebSphere Studio project. Note that you may see warnings about broken child links in inputPage.jsp and outputPage.jsp. You can safely ignore these warnings and click OK in the Files to publish dialog box. The warnings can be ignored because your earlier transfer from Host Publisher Studio has already installed the additional files. Click here for more details.

### **Test your modified application**

You can access your modified Host Publisher application with the same URI used for the original application. For example, the sample application deployed here can be accessed at

<http://your.HostPublisherServer.com/HostPublisher/UofMApp1/inputPage.jsp>

IBM eServer iSeries



## WebSphere Tools

IBM WebSphere Development Studio Client for IBM iSeries V4

- **Included with WebSphere Development Studio for iSeries, Product Number 5722-WDS (processor-based)**
- **Or can purchase stand-alone Product Number 5724-A81 (user-based)**
- iSeries-specific enhancements for Java development
- iSeries-specific enhancements for Web development
- Integrated workstation based iSeries development tools including Remote System Explorer/Remote System Framework and JLPex editor

See Software Announcement Letter 202-127 dated June 4, 2002

This tool will satisfy the needs of most iSeries developers...

- iSeries specific enhancements are included in these Web and Java development tools to make it easier to develop Web and Java applications for the iSeries server.
- However, this Development Studio for iSeries does not provide support for applications requiring the use of EJBs or J2EE.
- For these functions, iSeries developers need to use WebSphere Studio Site Developer Advanced.

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## Other WebSphere Tools...



### WebSphere Studio Application Developer (V4.0.3 for Linux and Windows)

#### ■ Part Number 45P8105 (user-based)

- A powerful Java development environment that supports JDK 1.3, configurable runtime, incremental compilation, scrapbook, dynamic debugging, and refactoring
- Advanced Web, Java, and XML development environments designed to J2EE 1.2 specifications
- Web services tools to quickly develop, describe, and deploy Web services-enabled applications based on open, cross-platform standards like UDDI, SOAP, and WSDL
- A Relational Schema Center focused on relational database design and database administration tasks such as import and mapping schemas and other advanced functions
- An integrated roles-based team environment

For more information, see [http://www.ibm.link.ibm.com/usalets&parms=H\\_202-057](http://www.ibm.link.ibm.com/usalets&parms=H_202-057)

WebSphere Studio Application Developer is an easy-to-use, integrated development environment for building, testing, and deploying J2EE applications that rapidly grows and adapts to meet the most stringent business demands. This WebSphere Studio Workbench-based product is designed for Java and J2EE developers requiring integrated support for Java, EJB, Web, Servlets, JSP, XML and Web services. Additionally, it offers many quality and productivity enhancement functions to help you shorten development and test cycles.

## Step 6.

Install the J2EE files on the application server  
using WAS Administrator



## Working With the Server Side Host Publisher Server (Runtime)

Administrator  
Console

Windows  
NT 4.0,  
2000, XP

Can administer  
multiple Host Publisher  
Runtime Servers from  
one Host Publisher  
Administrator Console

## Notes: Host Publisher Sample Programs

The Host Publisher Studio allows you to import the integration object created from the 5250 application example, and define a web browser interface for entering the input data, and receiving the output. As with the host access toolkit, the studio provides an interactive wizard that helps you get started quickly. It is important to reiterate that you do not change the original application and you don't even need access to the OS/400 display file source.

If you can write your own applications using the beans or HACL interface directly gives you a great deal of control, however it requires utilizing some fairly low-level programming techniques. It also requires developers to handle situations (such as screen recognition and waiting for the session's input inhibited indicator to clear) before processing the next step. To avoid having to do this tedious coding, Host Publisher gives you a much easier means of interacting with the 5250 application, and it creates Java bean components that you can then utilize in your own application development tools, such as IBM VisualAge for Java. Host Publisher is often more than adequate for building the appropriate solution. For more demanding application requirements, one can import these integration objects into a full-fledged Java IDE such as VisualAge and build solutions.

See the simple example *Building A Java Adapter Over a 5250 Application to enable B-B transactions at* <http://www.iseries.ibm.com/developer/java/topics/hostpubadapter.html> that shows an example of taking an interactive 5250 application, then introduces you to 'web enabling' it via the Host Publisher product. Next, you will use this web integration infrastructure to create what is commonly termed as an adapter. Put simply, an adapter is analogous to a human translator that provides interpretation between people that do not speak a common language. In this case, the Java adapter understands the interactive 5250 application transaction flow and structure of the input and output data. The adapter also understands a Java runtime environment direct program call. This allows applications such as Connect for iSeries to take advantage of the robust, well-tested 5250 order entry application infrastructure running on an iSeries machine, and make it accessible via a web browser. For interactive, browser-based applications.

## Fine-Tuning the Host Publisher Server for the Web

The navigation pane on the Host Publisher Administration page contains functions for the Host Publisher Server

- **Server Status**
- **Administration**
- **Connections**
- **Application Administration**
- **Problem Determination Tools**
- **Set Trace Options**



## Notes: Host Publisher Server

### Connection Manager

- Set of Java classes
- Encapsulates connection management
  - Session creation, priming, and destruction
  - Connection pooling
  - Userid/password pooling functions
  - Support Host Access (3270, 5250, VT) and Database (JDBC)

### Administration

- Java servlet and associated JSP pages
- Accessed via Web browser
- Monitors and controls state of run time environment
  - start and stop server
  - license management
  - pool management
- Connection manager
- Application Administration
- Problem determination
- XML Legacy Gateway Administration

### New Capabilities In Host Publisher V4.0:

#### Multi-language support

When using Host Publisher Administrator (on server) can view the Host Publisher documentation in languages other than the server's default language

#### Software Maintenance Utility

A new command-line tool to help you apply software fixes



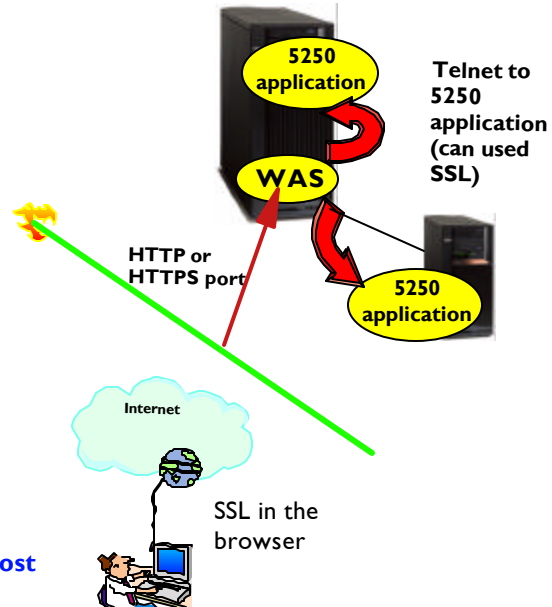
## Security Features...

Typical security mechanisms available through the Web can be used to control authentication and access to existing applications including:

- **Secure Socket Layer (SSL)** for data encryption between browser and web server as well as authentication
- **Secure Socket Layer (SSL)** also provides encryption between Host Publisher and Host applications

Security mechanisms deployed for host application systems remain available to control access and authorization

- **Secure access to Web applications and Host Publisher Administration** by using access controls provided in WAS and HTTP server



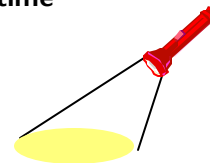
## Performance Features...

### Application Caching

- **Precompiles page into a Java Servlet**
  - If someone else asks for same page then the servlet is rerun
- **Page recompiled only when it changes**
  - Increases transaction rates and gives faster response time

### Connection Pooling

- **For JDBC and 3270/5250/VT access**
- **Pool of connections open to data sources**
- **Can specify that all requests serialize on connection cache (so if 25 connections in pool and in use then 26th request waits for free connection) or can specify that once initial "X" connections in use then create an "X+1" connection**



## RAS Features...

### Supports WAS Workload Management features

- **Vertical and horizontal cloning**
  - Can have multiple JVMs in WAS, and these can be clones
  - Vertical cloning is limited to one machine (vertical cloning), and horizontal cloning is spread across multiple machines
- **Benefits are:**
  - Improved throughput as requests can be **distributed across multiple JVMs**
  - Better fault tolerance because if one JVM fails the **user request can be processed by any remaining** clone that can handle the request.
  - If someone else asks for same page then the servlet is rerun
  - Vertical cloning is also useful when configured on a machine which is powerful enough that a **single JVM cannot effectively utilize its CPU power** (such as on a multiprocessor machine)

## Host Publisher V4.0 Enhancements

### Support for WAS V4.0 (J2EE compatibility)

- Support for AEs, AEd and AE
- This includes migration of Host Publisher applications to achieve J2EE compatibility

### Web Services

- Quickly extend legacy services as new web services
- IOs and EJBs are enabled as Web Services. Web Services creation occurs in WebSphere Studio

### WebSphere Portal Family support

- Extend legacy content as new portal content- WPS 2.1

### Accessibility (CI 162)

- Web applications produced by Host Publisher Studio are accessible
- Keyboard accessibility for all components but HP Admin and DB access.
- Added documentation of accessibility features

### Server Multi-Language support

- Host Publisher Administrator and documentation

### Serviceability tools

- Software Maintenance Utility and Information Bundler

### iSeries two stage install (install and config)

## Notes: Web Services

Web Services provide a way for applications to connect and interact on the Web more easily and efficiently. Web Services are self-contained, modular applications that can be described, published, located, and invoked over the Web. Platform-neutral and based on open standards, Web Services can be combined with each other in different ways to create business processes that enable you to interact with customers, employees, and suppliers.

Typically, Web Services use Internet protocols, such as HTTP, use XML message formats, and are plugged into Web Service registries where other developers can combine and deploy them. Think of them as strategic building blocks for automated business processes that can be deployed across your enterprise and shared with other enterprises.

Support for Web Services has been implemented in a number of IBM software products, including WebSphere Application Server and WebSphere Studio tools (such as WebSphere Studio Application Developer) at the 4.0.2 level or above.

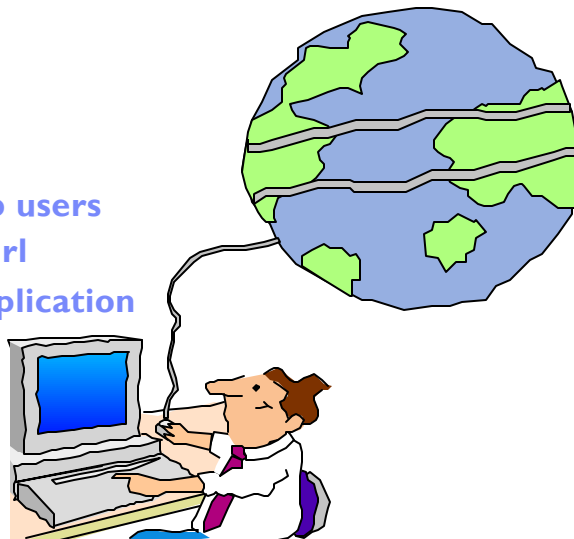
You can use the Host Access and Database Access components of Host Publisher Studio to create supporting files that enable Host Publisher Integration Objects and EJB Access Beans to be deployed as Web Services. Application Integrator assembles these Java objects (and optionally JSP pages that reference the Java objects) into a J2EE .ear file. You can then import the .ear file into a new or existing WebSphere Studio project, where you can create and deploy Web Services.

To create an Integration Object in Host Publisher and then enable it to become a Web Service, you would perform the following steps:

1. Using Host Publisher Studio and create 1 or more Integration Objects or EJB Access Beans with **Options > Create Web Services Integration Object Support** checked.
2. Import the Web Services Integration Objects or EJB Access Beans into Application Integrator. Create an application that consists of Web Services Integration Objects, EJB Access Beans, or both, and then generate an .ear file for the application by clicking **File > Create J2EE Archives**.
3. Import the .ear file into a J2EE-enabled WebSphere Studio tool (for example WebSphere Studio Application Developer).
4. Use the WebSphere Studio tool to create a Web Service.
5. Generate a sample application and run it to test your Web Service.
6. Complete development and testing of the application you imported in step (3).
7. Deploy the completed application.

See White Paper 'IBM and the Strategic Potential of Web Services' at [http://www-3.ibm.com/software/solutions/webservices/pdf/May13\\_IBM\\_WebServices.pdf](http://www-3.ibm.com/software/solutions/webservices/pdf/May13_IBM_WebServices.pdf)

**Step 7.**  
**Ready for Web users**  
**to enter url**  
**to access the application**



## WebSphere Host Publisher NLVs

WebSphere Host Publisher (V4.0) - Server provides National Language Versions (NLVs) for:

Chinese (Simplified and Traditional)	
English	Danish
French	Dutch
German	Finnish
Italian	Hungarian
Japanese	Norwegian - Bokmal
Korean	Polish Language
Portuguese (Brazilian)	Portuguese
Spanish	Portuguese MNCS
Turkish	Romanian
Arabic	Russian
Belgium Dutch	Slovakian
Croatian	Slovenian
Czech	Swedish

Note: WebSphere Host Publisher does not support secondary languages.

WebSphere Host Publisher (V4.0) - Studio provides National Language Versions (NLVs) for:

Chinese (Simplified and Traditional)
English
French
German
Italian
Japanese
Korean
Portuguese (Brazilian)
Spanish
Turkish

### New in WebSphere Host Publisher V4.0: Multi-language support

When using Host Publisher Administrator (on server) can view the Host Publisher documentation in languages other than the server's default language

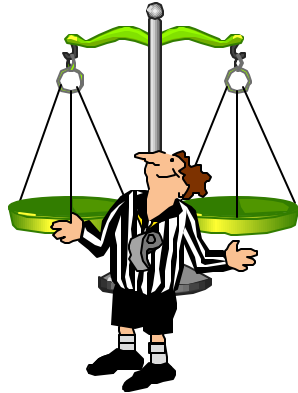
## Host Publisher - Key Differentiators

*Easily extend just a portion of existing applications to the Web...*

- Can take an existing full-function, in-house application and present **only selected paths** to Web users...
  - ▶ Can merge/split applications and screens
- Can translate system screens also
- Source code not required
  - ▶ Existing green screen still available
- Supports multiple types of user interfaces
  - ▶ 5250, 3270, etc



*This tool enables you to 'really' take an existing host application and move it to the worldwide Web!*



## Other Products

## WebFacing

### Before and After WebFacing

**Session A - [24 x 80]**

File Edit Transfer Appearance Communication Assist Window Help

PrintScreen Copy Paste Send Recv Display Color Map

```

Z0000001          Sign On/Off
Environment . . : Appcon/IBM Test System...
Type information. Then press Enter.

Required...
  Identification . . . _
  Password . . . . . _

Optional...
  Company . . . . . _
  Division . . . . . _

(C) 1992 Copyright Application Consultants.
F1=Help F2=Field help F3=Exit
ME a                                     09/03/99
Connected to remote server/host TORAS48F using port 23

```

APPCON - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://localhost:WebDoc/Service/IBM/AS400/WebFacing/online/htpccar.html?Control=Service/APPCON

**APPCON**

20000001 Sign On/Off 55555555 Enter Help

Environment . . . : Appcon/IBM Test System... Field help Exit

Type information. Then press Enter.

Required... Identification . . . Password . . . . .

Optional... Company . . . . . Division . . . . .

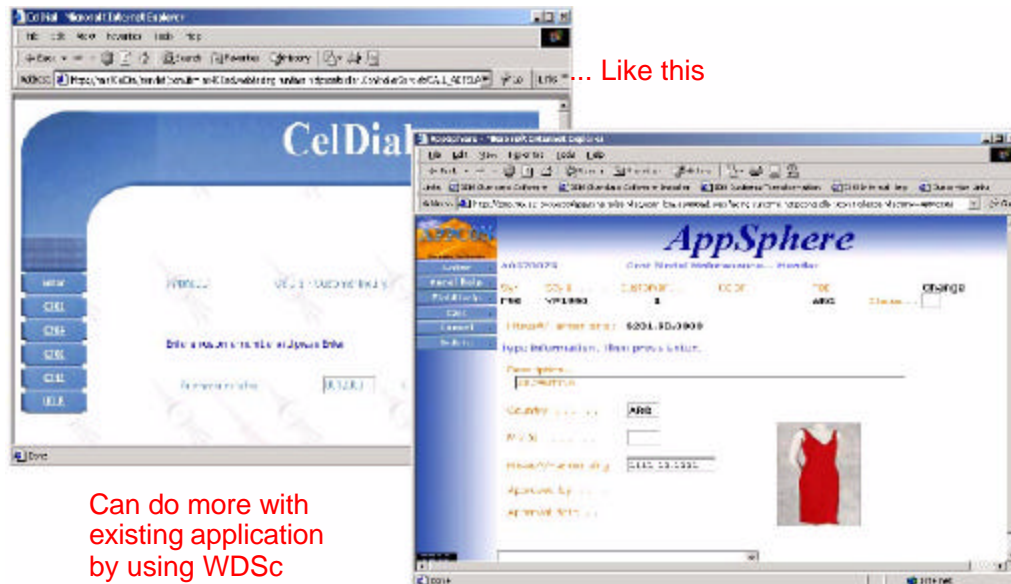
(C) 1992 Copyright Application Consultants. F1=Help F2=Field help F3=Exit

IBM WebFacing

Done



## After WebFACING



## Key Differentiators

- **IBM WebFACING Tool**
  - ▶ **Conversion tool .. from DDS source to JSPs**
  - ▶ **Semi-automatic conversion**
  - ▶ **No interactive feature** required with V5R2 and new hardware
  - ▶ **Designed for iSeries**
    - Uses WDS c for iSeries to provide unique iSeries functions to programmer

Powered by Eclipse™ technology  
Windows®



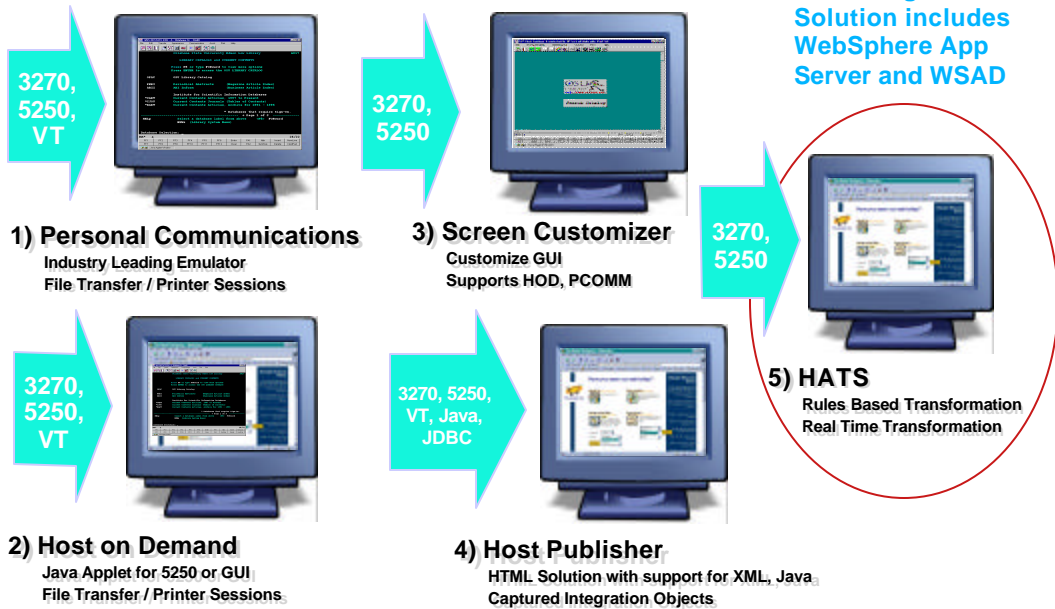
**WebSphere** Welcome to IBM WebSphere Host Access  
Transformation Server (HATS)



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or both



## WebSphere Host Integration Solution



## Host Access Transformation Server (HATS)

### Converts green screens to GUIs on the fly, in real time

- ▶ A web-to-host 3270, 5250 HTML emulator...
- ▶ Preserves existing application flow...
- ▶ Translates system screens too...

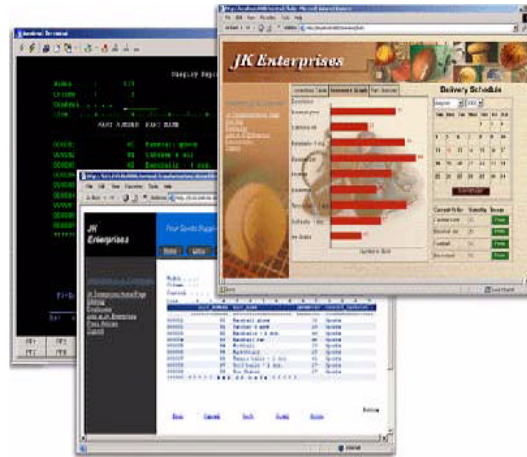
### Easy Web-to-host first step

- ▶ Has a rules-based transformation engine...
- ▶ "Near" load-n-go implementation
- ▶ Low skills requirement

### Zero footprint on the desktop

### Industry-standards

- ▶ HTML, HTTP, HTTPs



## Capabilities ...

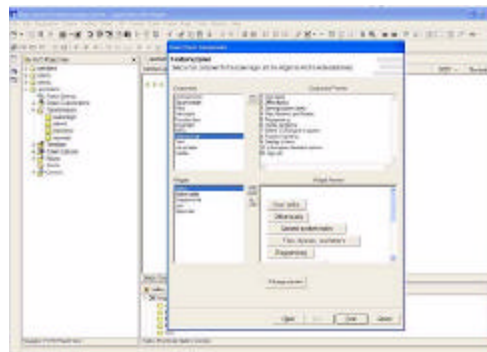
### Designer is plug-in to WebSphere Studio Development Tools

### Eliminates need to customize every screen

- ▶ Rules-based data stream translator

### Additionally customizable

- ▶ Customize individual screens
- ▶ Play and record macros
- ▶ Add tabbed folders and graphs
- ▶ Store and retrieve global variables
- ▶ Can integrate with WebSphere Portal
- ▶ Skip and combine screens



HATS Studio plugs into the Eclipse-based WebSphere Studio, and provides an easy-to-use wizard-based environment for converting host screens to a web-like appearance and functionality

## Notes: Key Selling Points - HATS

Host screens are converted to GUIs on the fly, in real time

- On-the-fly screen conversion using the rules-based transformation engine. HATS does not "break down" when changes are made to the host application.

Easy Web-to-host first step

- Default rules allow your host application to be on the Web within hours of loading the software. There is no requirement for programming skills, and there is no need to customize every screen. If further customization is required this can be done at the customers own pace. Eliminates need to customize every screen

- Due to the rules-based transformation engine not all screens require customization, and when changes are made to the host application HATS will continue to work without modification.

Low skills requirement

- HATS Studio, which plugs in to the Eclipse-based WebSphere Studio, is an easy to use wizard-based environment for converting host screens to a web-like appearance and functionality. No programming skills are required.

Preserves existing application flow

- HATS does not require any changes to the Host Application.

Rules-based, customizable

- HATS Studio provides easy-to-use wizards for customizing how host components are displayed. Use the WebSphere Studio or any industry-standard HTML editor to add: logos, graphics, backgrounds, Web links and other HTML elements.

Customizations are saved as reusable rule sets that can be applied to any host screens that share similar requirements.

- HATS can apply: an individual rule set to each host application; different rules sets to a single host application for different end user communities; the same rule set to multiple host applications.

"Near" load-n-go implementation

- Default rules allow your host application to be on the Web within hours of loading the software.

Zero footprint on the desktop

- Only software needed on the client is a Web browser, which provides support for 3270 and 5250 hosts.

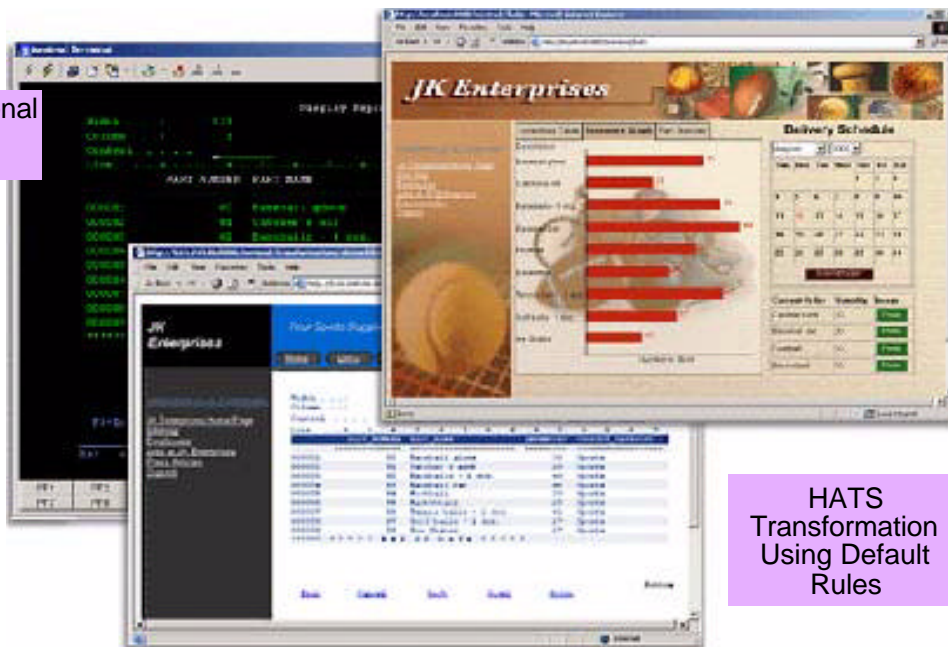
Virtually unlimited functionality

- Adding customization by using Macros, Global variables, Tabbed folders, Graphs, Java Widgets (e.g. calendar, calculator).
- Open J2EE architecture allows virtually unlimited flexibility and extensibility.

HATS requires all configuration to be done in the HATS Studio (a plugin to WebSphere Developer Studio). Once configuration has been completed in the Studio, the application is assembled into an enterprise application and installed on a WebSphere Application Server. Once it is started, it can begin to service clients.

## Example

Traditional Green Screen



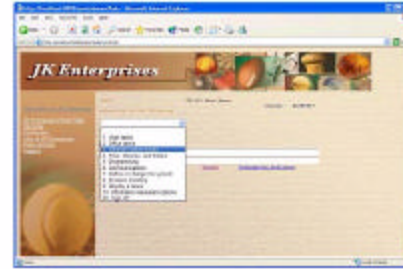
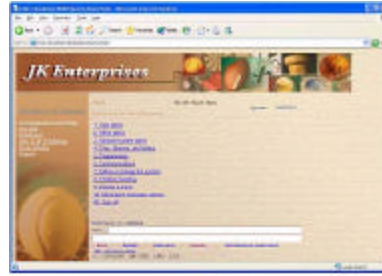
HATS Transformation Using Default Rules



## Differences - HATS vs HATS LE

### Features in both HATS and HATS LE

- Default host screen transformation
- Configuration of host connection settings
- Ability to chose a standard template
- Ability to turn on/off application and host pads
- Keyboard support



### Features in HATS, not in HATS LE

- Customize individual screens
- Play and record macros
- Add tabbed folders and graphs
- Store and retrieve global variables
- Integrate with WebSphere Portal
- Skip and combine screens

## Comparison of HATS and HATS LE

Function	HATS	HATS LE
On-the-fly rules-based conversion of host screens to HTML GUIs	Yes	Yes
No need to access or modify source code	Yes	Yes
Host applications can be deployed to the Web within hours	Yes	Yes
Does not require modification when changes are made to host applications	Yes	Yes
Zero-footprint, zero-download - only code needed on the client is a Web browser	Yes	Yes
Supports iSeries subfiles	Yes	Yes
Provides native keyboard support	Yes	Yes
Secure HTTP (HTTPS) and Secure Socket Layer (SSL) security	Yes	Yes
Runs with WebSphere Application Server V4 & V5, including V5 Express	Yes	Yes
Leverages reliability and scalability of WebSphere Application Server	Yes	Yes
Works with Internet Explorer and Netscape Web browsers	Yes	Yes
Supports 5250 hosts	Yes	Yes
Supports 3270 hosts	Yes	No
Requires a WebSphere Studio installed on PC (either V4 or V5) to customize HTML	Yes	No
Uses Web-based Configurator and Management tool to customize HTML	No	Yes
Runs on iSeries Server Platform	Yes	Yes
Runs on AIX, Windows, Solaris, and zSeries Server Platforms	Yes	No



## Comparison of HATS and HATS LE

Function	HATS	HATS LE
Any individual screen can be fully customized	Yes	No
Generate and run macros	Yes	No
Skip and combine screens	Yes	No
Store & retrieve data in global variables	Yes	No
Enter data on behalf of end user	Yes	No
Convert text entry fields to valid value lists	Yes	No
Create tabbed folders (with easy to use wizards)	Yes	No
Create bar & line graphs (with easy to use wizards)	Yes	No
Redirect users to other URLs	Yes	No
Globally replace text	Yes	No
Add business logic	Yes	No
Print locally with PDF printing function	Yes	No (1)
Use HATS portlet to integrate with WebSphere Portal	Yes	No

(1) Can combine use of iSeries Access for Web to work with spooled printer output and convert to PDF

## iSeries Access for Web



## iSeries Access for Web provides many functions on iSeries...

### My Personal Folder

#### Print

- Printer output
- Printers
- Internet Printers
- Printer shares
- Output Queues

#### Database

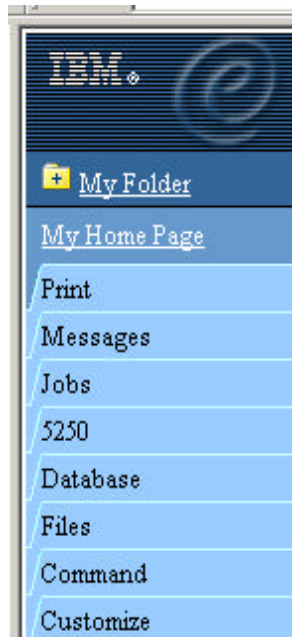
- Tables
- My Requests
- Run SQL
- Copy Data to Table
- Import Requests

#### 5250 ★

- Start 5250 Session

#### Commands

- Run commands (Batch)



#### Files

- Browse Files (in IFS)
- File Shares (in NetServer)

#### Messages

- Display Messages
- Send Messages
- Operator Messages
- Message Queue

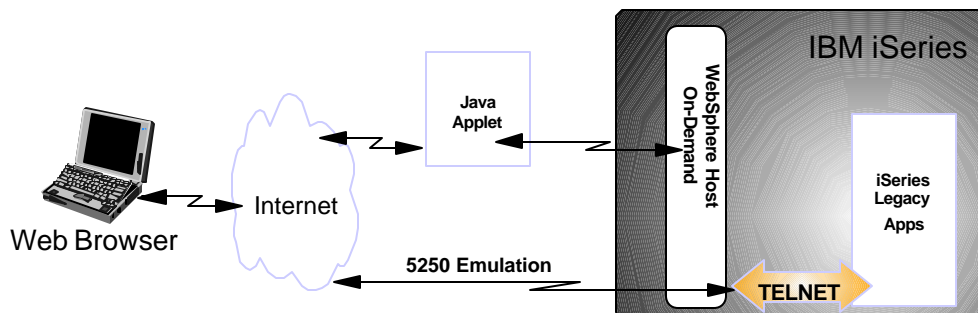
#### Jobs

- User Jobs
- Server Jobs

#### Customize

- Administrator controls access to functions by user or group of users:
  - Can customize front page
  - Can limit what tasks can be performed

## WebSphere Host on Demand



#### ■ Basic 5250 Emulation

- Translation from 5250 data stream to HTML at execution time
- May be done via Java applet

#### ■ Uses Screen Customizer for GUI (reaching end-of-life)

#### ■ Available via:

- WebSphere Host Access Client Package
- WebSphere Host Integration Solution

#### ■ Interactive Job Workload

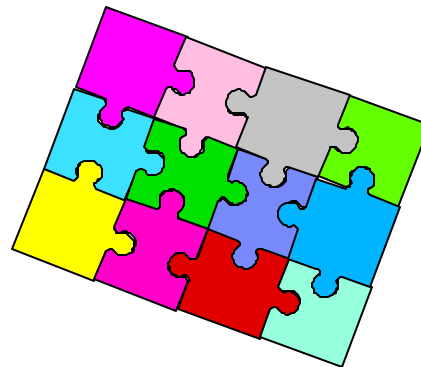
## Notes: Screen Customizer reaching end-of-life

Software Announcement 202-222  
September 24, 2002

Excerpt:

- This will be the last release of Screen Customizer. The IBM strategic solution for rejuvenation of legacy applications is WebSphere Host Access Transformation Server which delivers rules-based transformation of host screens with advanced customization. This product will be exclusively available within WebSphere Host Integration Solution V3.

See announcement letter via: <http://www2.ibmink.ibm.com/>



*Could combine the use many products...*

# iSeries Access for Web - sample 'customized' front page

The screenshot shows a web browser window with the URL <http://www.ibm.com/webaccess/WAPHome>. The page features a blue header with the IBM logo and the text "Access for Water" and "Supplying quality boats since 1962". Below the header, there are several sections: "Services" with links like "View available boats", "This Week's Special" featuring a boat image and text about a 28-foot 1978 Carver Santa Cruz, and "Weather Conditions" with a map of the United States. A red arrow points from a text box to the "View available boats" link.

Could include a link in here that started various refaced applications -- maybe on another system...

# RPG Application - AS/400 WSG BOAT DEMO

The top screenshot shows a terminal window with the title "AS/400 WSG Boat Demo" and the date/time "10/04/02 10:07:07". It displays a search form with fields for "Type", "Length (feet)", and "Year built", and radio button options for "P=Powered, S=Sailing, T=Tug, C=Commercial, A=All". A yellow callout box with an arrow points to the "Type" field, containing the text "Using iSeries Access for Web 5250 interface".

The bottom screenshot shows a similar terminal window with the title "AS/400 WSG Boat Demo" and the date/time "3/20/03 18:31:45". It displays the same search form. A yellow callout box with an arrow points to the "Type" field, containing the text "Using HATS LE interface".

Using iSeries Access for Web 5250 interface

Using HATS LE interface

# Boats application - WebFacing

Services

- View available boats
- See boat details - 5250
- See boat details - Host Publisher
- See boat details - WebFacing
- Order a boat
- Work with invoices
- Check messages
- Check system messages
- Administrator tasks
- Manage incoming items
- Monitor jobs

Could reface application using IBM WebFacing Tool

Boats

AS/400 WSG Boat Demo 10/03/02 20:36:37

Enter your search parameters

Type:  P=Powered, S=Sailing, T=Tug, C=Commercial, A=All

Length (feet):  feet to start from

Year built:  year to start from

Or modernize with HATS

JK Enterprises

Delivery Schedule

Item	Q1	Q2	Q3	Q4
Item 1	10	20	30	40
Item 2	15	25	35	45
Item 3	20	30	40	50
Item 4	25	35	45	55
Item 5	30	40	50	60

# Boats applications - Host Publisher

THE SEVEN SEAS (snapper) - Microsoft Internet Explorer

Address: http://seriesd.fw.ibm.com/boats2efboatst\_ind.jsp

## BOATS OF THE SEVEN SEAS

Select:

Type of Boat:  Commercial Sailing Tug Power

Minimum Length:  10 20 30 40 50 75 100 200 300

Earliest Year Built:  1940 1950 1960 1970 1980 1990 2000

Process Data Clear Data

Host Publisher



## Main Features

	iSeries Access for Web	HATS LE	Host Publisher	IBM WebFacing Tool	HATS
<ul style="list-style-type: none"> <li>• Web-enables existing Applications</li> <li>• Based on Java Technology</li> <li>• Presentation</li> </ul>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• Yes</li> <li>• HTML, JSPs, Servlets</li> </ul>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• Yes</li> <li>• HTML, JSPs, Servlets</li> </ul>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• Yes</li> <li>• HTML, JSPs, Servlets/Yes</li> </ul>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• Yes</li> <li>• HTML, JSPs, Servlets</li> </ul>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• Yes</li> <li>• HTML, JSPs, Servlets</li> </ul>
<b>Runtime Environment</b>	<ul style="list-style-type: none"> <li>• WAS</li> <li>• ASF Tomcat</li> </ul>	• WAS	• WAS	• WAS	• WAS
<b>Supported Browsers</b>	<ul style="list-style-type: none"> <li>• MS Internet Explorer 5.0 +</li> <li>• Netscape 4.7 (AIX, Linux) and 6.2 (Windows)</li> <li>• Opera 5.0 (Linux), and 6.0 (Windows)</li> </ul>	<ul style="list-style-type: none"> <li>• MS Internet Explorer 5.0 +</li> <li>• Netscape 6.0</li> <li>• Netscape 4.72 (no keyboard support)</li> </ul>	<ul style="list-style-type: none"> <li>• MS Internet Explorer 5.0 +</li> <li>• Netscape 4.x or later versions</li> </ul>	<ul style="list-style-type: none"> <li>• MS Internet Explorer 5.0 +</li> </ul>	<ul style="list-style-type: none"> <li>• MS Internet Explorer 5.0 +</li> <li>• Netscape 6.0</li> <li>• Netscape 4.72 (no keyboard support)</li> </ul>
<b>Interactive Feature Required</b>	No - unless using 5250	Yes	Yes	No - with V5R2 and new hardware	Yes
<b>Supported Host Interfaces</b>	5250	5250	5250, 3270, VT52, VT100, VT220	5250 - from DDS Source. Source must be available for each screen format	5250, 3270
<b>Web-enables System Functions</b>	Yes	Yes	Yes	No - limited support for selected commands in WDS V5	Yes

## Main Features (continued)

	iSeries Access for Web	HATS LE	Host Publisher	IBM WebFacing Tool	HATS
<b>Host Application modernization</b>	No, other than runs in browser	No, other than runs in browser	Yes	Yes	Yes
<b>SQL Database Access</b>	Yes	No	Yes	No	No
<b>Code Changes Required</b>	No	No	No	No - although may choose to optimize for the Web	No
<b>Programming effort to convert host interface to Web interface</b>	None	None	Using Studio: 1. Record host screen navigations and create IOs that encapsulate those navigations. 2. Build JSP pages that require IO input and render IO output	None - unless DDS keywords are not supported by WebFacing	Two methods: 1. default parameters - no pgmng effort 2. customization - tracing application execution path, defining rules
<b>Customization</b>	Can customize what iSeries functions user can access	Customize screen look and keyboards	Yes - JSP pages can be customized, and IOs can be reused in a WAS application (Servlet, Web Services, EJB)	1. CODE designer 2. Cascading style sheets 3. Web Tools	1. Web Tools
<b>Allows exposure of Java artifacts to other tools</b>	No	No	No	Yes	No - may create Java extensions to the application
<b>Merge/split of application screens</b>	No	No	Yes - handled by macro recorder	Yes -with programming changes	Yes - handled by macro recorder

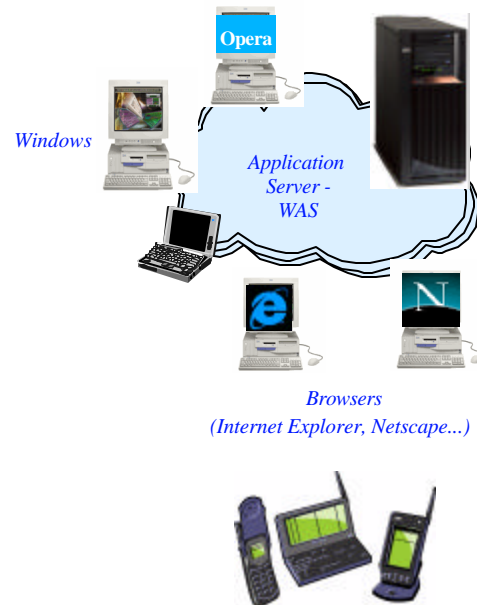
## Summary

Many of the products highlighted in this presentation can be positioned as **complementary** to each other

Each product brings great strengths in a particular area...

Determine what product is right for the task at hand...

- ▶ One may be right for this task...
- ▶ But the next project might well be better suited for one of the other products...
- ▶ Another project might call for a combination of these tools



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