WebSphere software

IBM

Host Access Transformation Server
HATS Tutorial
Module 1

HATS Overview

*e* business software

IBM Software Group

- ► This is the first of a series of early education modules that will introduce you to Host Access Transformation Server
- ► It is suggested that the presentation file be downloaded first and viewed by itself along with the audio for crisper graphics when viewing the WebSphere Studio screen shots
- ► The first module will cover the main functions, concepts and components of HATS
- ► The modules should be taken in sequence starting with this module
- ► The accompanying modules are designed to be tutorials that you can use to build a HATS application with a connection to a publicly accessible live host system
- ► Some of the topics covered in the tutorials will be:
  - ► Using the HATS studio
  - ► step by step instructions to build a a HATS application using the default transformations
  - ► Steps needed to customize host screens and build transformation JSPs
  - ► advanced topics, including how to use a macro with a HATS application

## Copyright Information

WebSphere software

IBM

## Host Integration Portfolio

- Host Access Client Package
  - ► Delivers the Industry's leading emulator solution
- Screen Customizer
  - ► Provides an easy first step in rejuvenating legacy applications
- WebSphere Host Publisher
  - ► Delivers tremendous web-to-host implementation flexibility
  - ► Based upon industry standard WebSphere technologies
  - ► Delivers HTML to the desktop
  - ► Extends legacy applications to new web applications
- Host Access Transformation Server
  - ► Easy first step to extend legacy application portfolio as HTML to web users
  - ► A solution based upon open industry standard WebSphere technology
  - ► A solution that delivers flexibility and extendibility

WebSphere software

IBM

---

- ► IBM WebSphere Host Access Transformation Server is part of the Host Integration Solution
- ► The Host Integration Solution is an offering that includes other products that comprise the Host Integration Portfolio, these include:
  - ► HOD
  - ► Screen Customizer
  - ► PCOM
  - ► Communication Servers
  - ► WebSphere Host Publisher
- ► HATS is an easy first step to extend legacy applications as HTML to web users
- ► HATS uses industry standard WebSphere technology and uses WebSphere Studio which is based on Eclipse technology

## Module 1 Topics

- What is HATS?
- HATS Installation Requirements
- WebShere Studio Workbench and HATS Studio
- Basic HATS Studio Scenario using Default Template
- Modifying the default template
- HATS Application Assembly
- Conclusion

**WebSphere** software

IBM

---

▸ Module 1 Topics
  ▸ What is HATS?
  ▸ HATS Installation Requirements
  ▸ WebSphere Studio Workbench and HATS Studio
  ▸ Basic HATS Studio Workbench and HATS Studio
  ▸ Modifying the default template
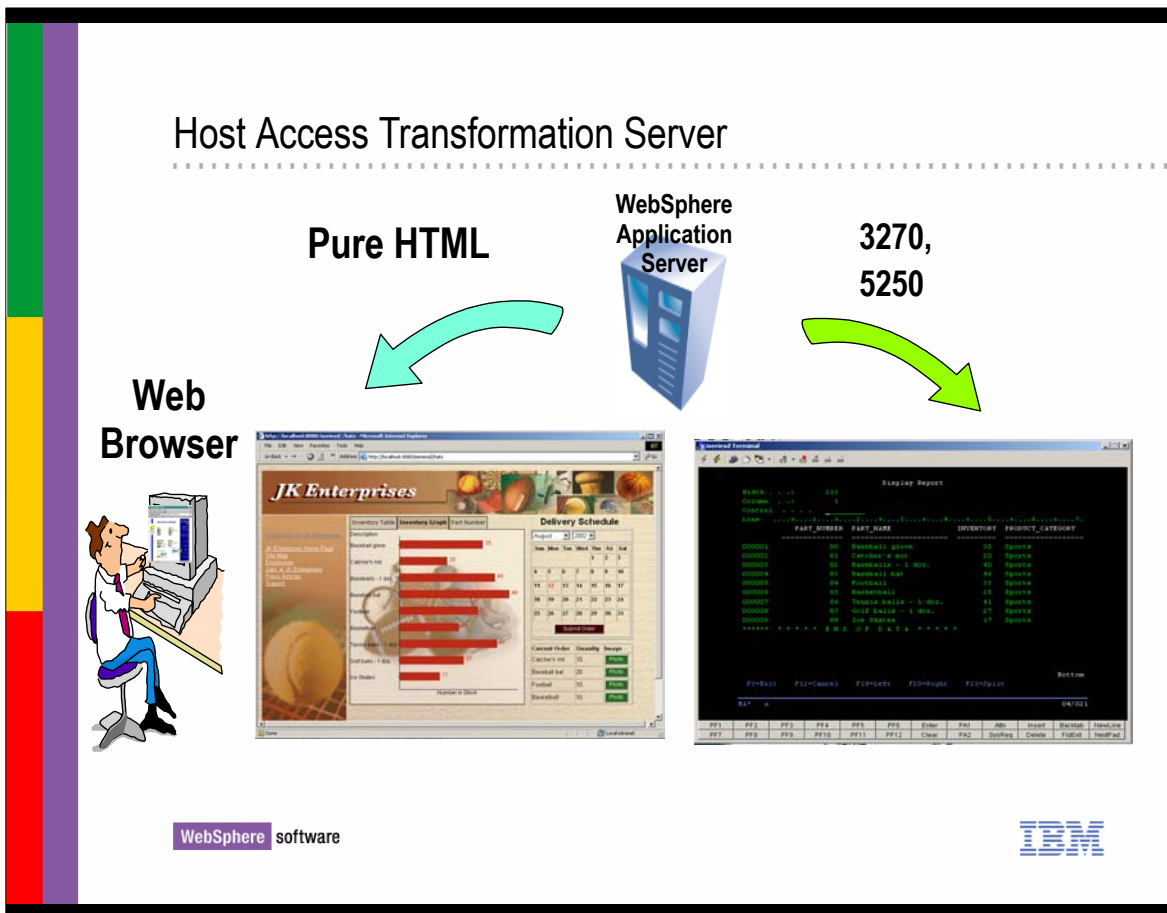  ▸ HATS Application Assembly
  ▸ Conclusion

What is Host Access Transformation Server (HATS)?

- Host Screens are converted to web-like GUIs on the fly, in real time
- Preserves existing application flow
- Easy web-to-host first step
- Eliminates need to customize every screen
- Low skills requirement
- Rules-based, customizable
- "Near" load-n-go implementation
- Zero footprint on the desktop
- Iterative development
- Unlimited functionality
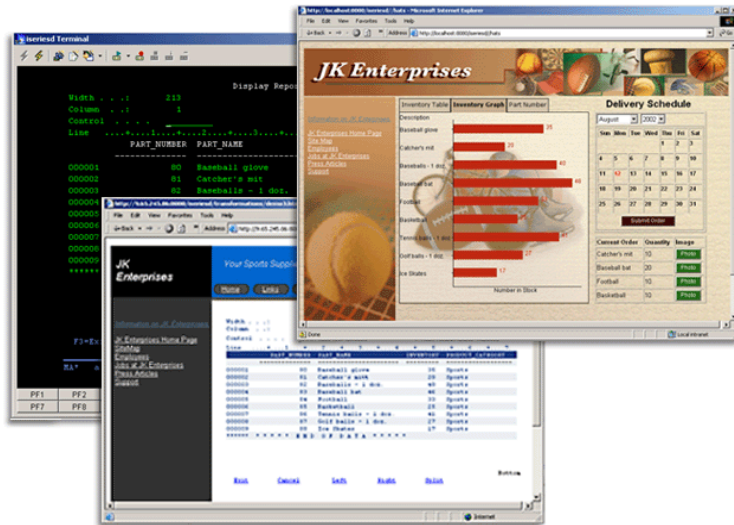
- ▶ IBM WebSphere Host Access Transformation Server gives you all the tools you need to quickly and easily extend your legacy applications to bus. partners, customers, or employees.
- ▶ HATS makes your 3270 and 5250 applications available through most popular web browsers, while at the same time converting them to graphical user interfaces (GUIs) with a web-like look and feel on the fly in real time
- ▶ HATS provides a zero footprint Web-to-host solution, so that the only software your users will need is a web browser
- ▶ HATS can add drop down lists, tables, radio buttons, tabbed folders, and much more to your host screens.
- ▶ The power of HATS is in its ability to accurately recognize host screens and transform them in real time to an HTML interface according to a set of predetermined rules

Host Access Transformation Server

WebSphere Application Server

Pure HTML

3270, 5250

Web Browser

WebSphere software

IBM

- ▶ 3270 or 5250 green screens are transformed on the fly to provide the user with a transformation of the green screen to a pure HTML web application presentation in the browser
- ▶ Templates are applied to the screens as they are navigated on the fly
- ▶ The templates can be customized for individual screens or a default template can be applied to each screen
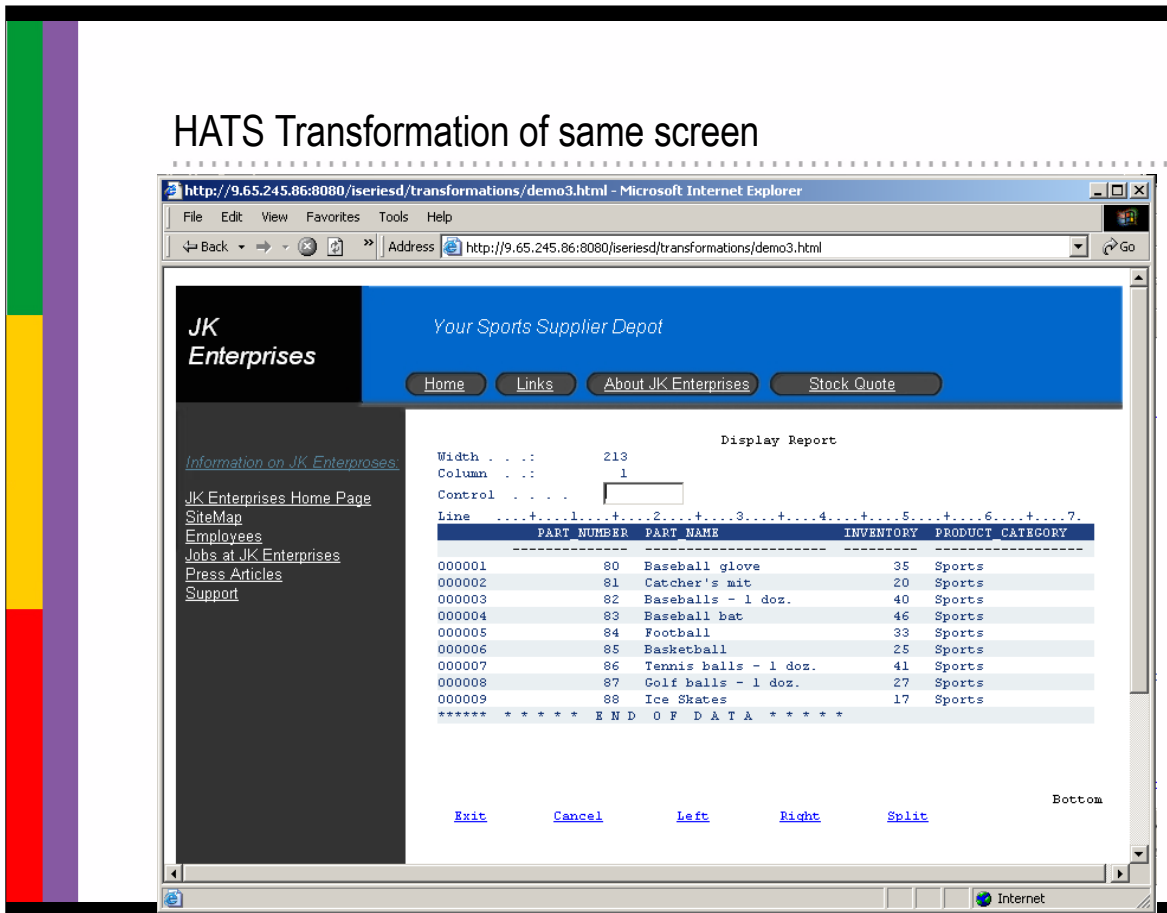
# Green Screen list of data



► A typical green screen application is shown here in a terminal window

## HATS Transformation of same screen



- The same green screen with the same data and a HATS template applied is shown here
- Notice that it has been customized with a company name and links are provided in the template
- The Host data is shown and an input field has been rendered for input from the user
- Keyboard controls have been rendered at the bottom as highlighted links

Customized Template applied to same screen

http://localhost:8080/iseriesd//hats - Microsoft Internet Explorer

File   Edit   View   Favorites   Tools   Help

Back   Address http://localhost:8080/iseriesd//hats

**JK Enterprises**

Information on JK Enterprises:

JK Enterprises Home Page
Site Map
Employees
Jobs at JK Enterprises
Press Articles
Support

This month's special: All baseball bats reduced 30%

| PART NUMBER | PART NAME | INVENTORY | PRODUCT CATEGORY |
| --- | --- | --- | --- |
| 000001 | 80 | Baseball glove | 35 | Sports |
| 000002 | 81 | Catcher's mit | 20 | Sports |
| 000003 | 82 | Baseballs - 1 doz. | 40 | Sports |
| 000004 | 83 | Baseball bat | 46 | Sports |
| 000005 | 84 | Football | 33 | Sports |
| 000006 | 85 | Basketball | 25 | Sports |
| 000007 | 86 | Tennis balls - 1 doz. | 41 | Sports |
| 000008 | 87 | Golf balls - 1 doz. | 27 | Sports |
| 000009 | 88 | Ice Skates | 17 | Sports |

Exit        Cancel        Left        Right        Split

► The same green screen is being shown here, but with some customization to just show the data results from the search and a customized template has been applied with graphic images to enhance the look and feel

Customized template applied with data shown as graph



- ► This is the same green screen, but the host data has been rendered as a bar graph and other items added to the browser page, the calendar delivery schedule and current order quantities on the bottom right
- ► You can see that by applying a customized template to the screen, the user may not realize that he is interacting with a host application
- ► The ability to apply customized templates to the host screen data combined with he flexibility to render the host data in the browser as regular HTML or GUI widgets is a very powerful capability that allows extension of legacy applications to the web

HATS Transforms host screens to JavaServer Pages

► HATS converts host screens to JSP pages at run time
► JavaServer Pages are part of a WebSphere application running on a Web Server
► End users access the pages from their Web browsers and use the pages to send and receive data from the host application
► All processing takes place on the WebSphere Application server
► Notice the use of JSP tags for the HATS components on the JSP page

HATS Studio let you Render host screen components as GUI Widgets on the Java Server Pages
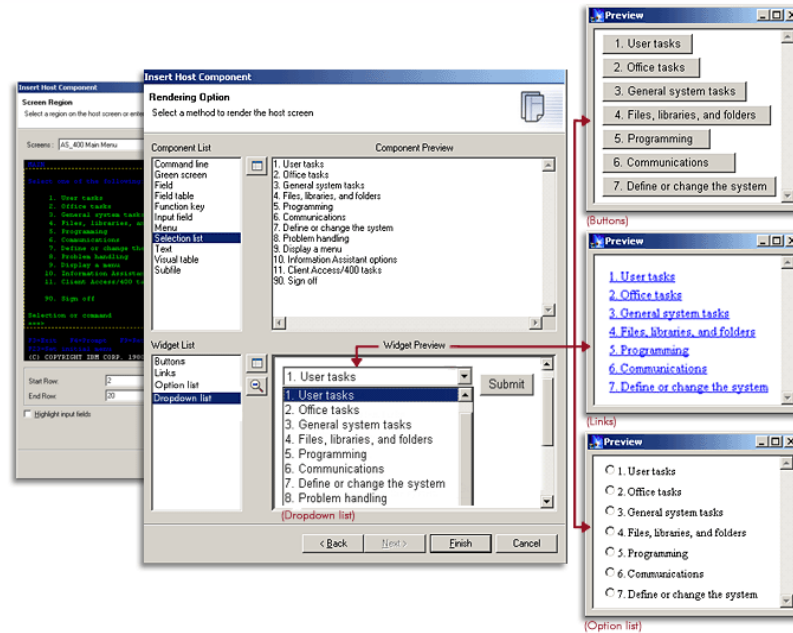
► The HATS Studio uses wizards to guide the application developer in the process of rendering host screen components as GUI Widgets on the Java Server Pages

► In this slide you can see that a green screen menu is being rendered in 3 different ways on the far left

► The top preview is showing the individual menu choices being rendered as buttons

► The middle preview is showing the indvidual menu choices being rendered as Links

► The bottom preview is showing the individual menu choices being rendered as an option list

HATS Scenarios with Macros and Host Publisher

Use macro support to navigate through multiple screens

HostPub or Customer bean
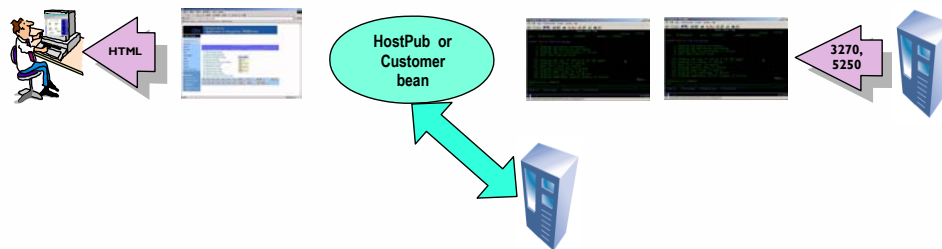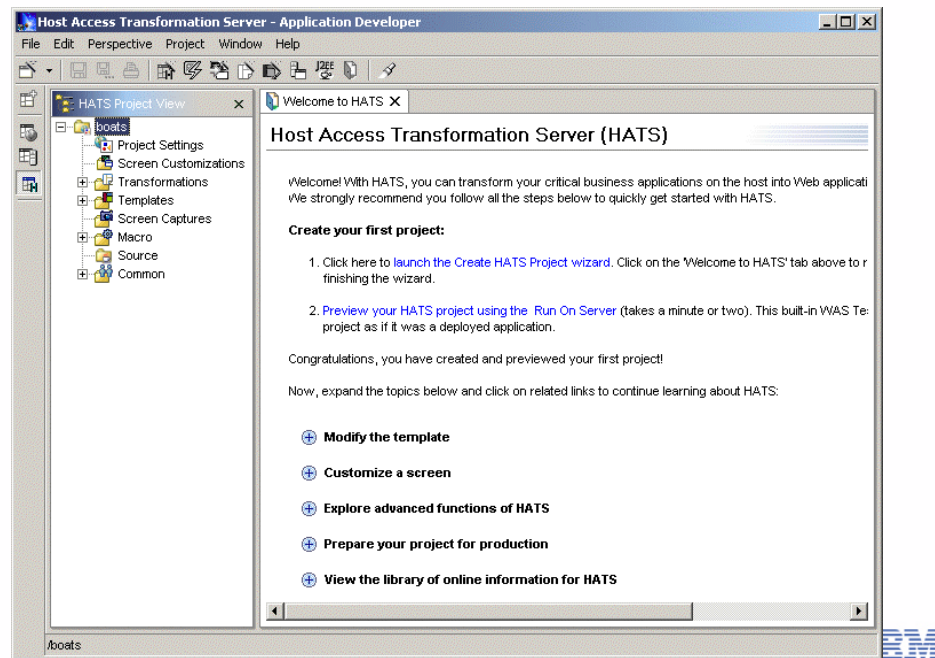
- Use Customer provided bean to add business logic to HATS flow
- Use HostPub Integration Objects to augment the HATS flow
  - This example HostPub queries secondary application and provides input to HATS flows
  - Note that HostPub does not share the HATS session

WebSphere software

IBM

- HATS has the capability of using prerecorded screen macros to navigate through screens on the host and then present the user with data from those screens in one HTML page
- In the middle is shown a HATS application where a macro is used to navigate through 2 screens on the host and also execute a Host Publisher java bean or could be a customer provided java bean and then present the user with one web page that has data from both the host application and also from the customer java bean in one web page
- The customer provided bean could be going to a database or some other data source to provide data to the user in the HTML page
  - In this case the user would have no knowledge that the data came from 2 data sources or that they had navigated through several host screens with macros to get the displayed data
  - This automated navigational ability of using macros provides enhanced productivity and also reliability to the application, since the user doesn't have to interact with every screen

## HATS Perspective and Welcome Page



► The HATS pespective is the user interface and integrated development environment (IDE) in WebSphere Studio from which you launch wizards, display lists of resources, and use navigational tools to build your HATS application.

► It also contains help information about both HATS and WebSphere Studio

► The HATS perspective is a collection of views and editors that allow you to create, edit, view, and run resources which belong to a specific HATS application

► The HATS Welcome page guides you through the process of developing a Web application using HATS

► As you develop the application and customize it, it is known as a project

► When you assemble the project into a J2EE-compliant .ear file, it becomes a WebSphere application

► The application can then be copied to a WebSphere server and deployed

# Terminology and Key Concepts

- HATS Application
  - ► is a set of servlets, jsp files, and data components needed to support the conversion of host applications into an HTML presentation
  - ► The set of application files are combined into a single J2EE EAR file and then deployed into a WebSphere Application Server
  - ► HATS Applications are created by developers using the HATS Studio

- Development Environment / HATS Studio
  - ► The system where the developer creates and edits the HATS application
  - ► HATS generated resources (session profile, templates, etc) are created and stored in folders
  - ► Built on Eclipse technology, HATS provides complete set of GUI tools to generate applications

- Production Server
  - ► The WebSphere Application Server where HATS applications are executed by end users
  - ► HATS applications are copied from the Development system and deployed as J2EE EAR files on the WebSphere application server

**WebSphere** software

IBM

# Terminology and Key Concepts (continued)

- Default Transformation
  - ► HATS can convert 3270/5250 green screens into HTML without customization
  - ► A default template will be used to convert host screen components into HTML
  - ► When using a default template on a screen this will provide a "default transformation" for each screen where a custom transformation has not been added
  - ► Customization may not be needed for all screens in which case the default transformation may be all that is necessary

- Host Component
  - ► An area of the host screen containing both data and formatting information
  - ► Examples of host components are the command line, a table, and function keys
  - ► Developer must identify which host components to present to the end user

- Perspective
  - ► is a collection of views and editors that allow a developer to create, edit, view, and/or run resources which belong to a specific type of application
  - ► For example there is a Java Perspective for creating java files
  - ► The HATS Studio is a plugin to WebSphere Studio and provides a HATS perspective

WebSphere software

IBM

## Terminology and Key Concepts (continued)

- Project
  - ► a HATS studio term to define a set of objects and resources created and used to assemble a HATS application
  - ► a development view of a HATS application
  - ► may contain components that are used only at design time and not used at runtime

- Template
  - ► an Java Server Pages file that is the HATS equivalent of a Lotus "Smart Master"
  - ► the template can be associated with an application
  - ► provides a specific look to the application (Company logos, links to other pages, etc)

- Screen Transformations
  - ► developer creates these to instruct HATS runtime server classes how host screens should be converted for web presentation

- ► Widget
  - ► A GUI control on a web page such as a radio button or a list box that is rendering host data

WebSphere software

IBM

## 3 Basic Roles for HATS applications

- Developer
  - ► Creates, edits and tests the HATS application using WSxD and the HATS Studio

- End User
  - ► The browser-based user of a HATS application
  - ► The user will invoke the application either from a URL or through a portal
  - ► Use the resulting host session to work with a host application

- WebSphere Administrator
  - ► The person who administers the WebSphere Application Server
  - ► The WebSphere Administrator is responsible for deploying the HATS applications that have been packaged as EAR files and transferred to the production server

**HATS Application Developer**

**WebSphere Administrator**

**End User**
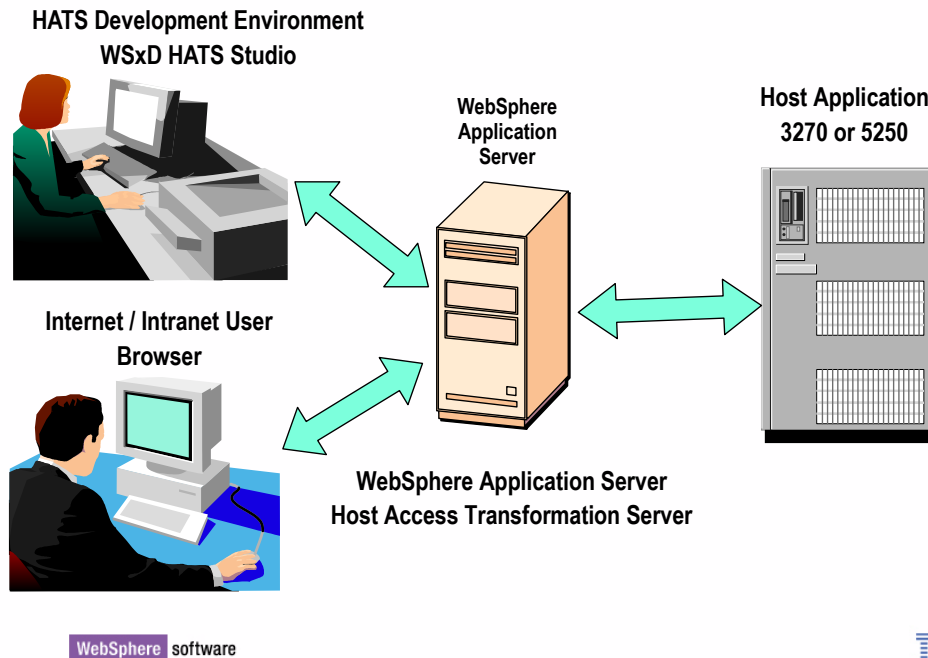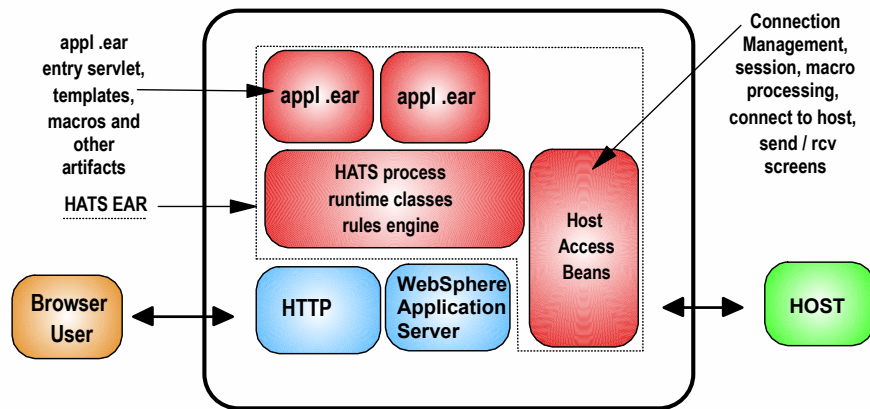
WebSphere software

IBM

---

► 3 Basic Roles for HATS Applications
- ► Developer
- ► End User
- ► WebSphere Administrator

HATS Components in the Network

HATS Development Environment
WSxD HATS Studio

Internet / Intranet User
Browser

WebSphere
Application
Server

Host Application
3270 or 5250

WebSphere Application Server
Host Access Transformation Server

WebSphere software

IBM

▸ The HATS development environment is shown in the upper right of the slide
▸ This is someone who will be creating the HATS application
▸ The WebSphere Application Server is in the middle of the slide where the HATS application runs
▸ The Host system is on the far right and could either be a 3270 or 5250 host system accessed via TN3270 or TN5250
▸ The user is represented in the bottom left and would run the HATS application from a web browser with the application URL for the Web server where the HATS application is running
▸ It is the responsibility of the WebSphere Administrator to inform the users of the URL to access the HATS application

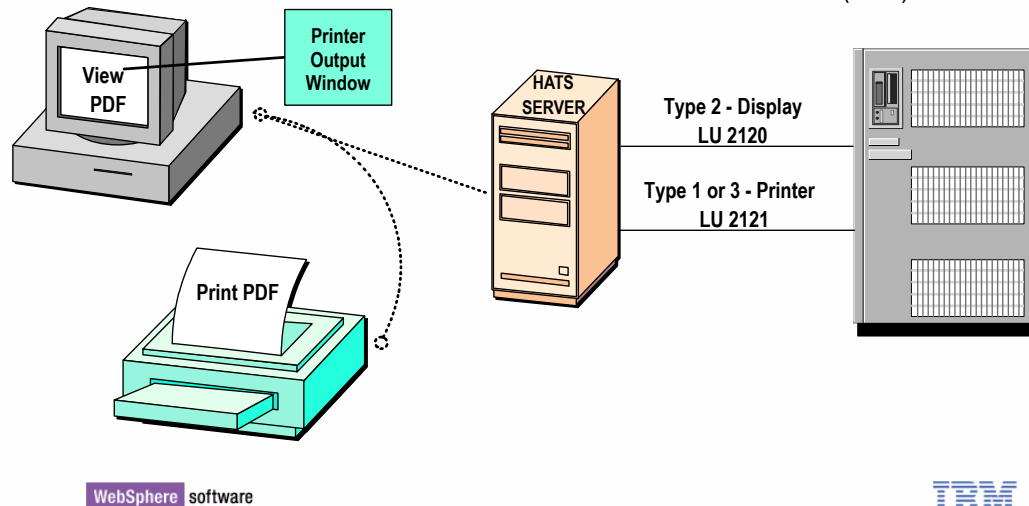HATS.EAR Application - Runs on WebSphere

- ▸ This slide is depicting the HATS EAR application and how they run on the WebSphere server
- ▸ The HATS application is comprised of templates, macros and other resouces that are contained in the application EAR file that run on the WebSphere Application server
- ▸ When the user runs the application from a browser the entry servlet runs and a connection is made from the HATS server to the Host
- ▸ Then host screens are processed and any rules associated with the application are applied to the screen templates before sending them to the user in the browser

**HATS Print Support**

- Need a Printer Logical Unit Associated with a Display Logical Unit
- Print Job is generated then status can be viewed in Printer Output Window Panel
- Print Job can be viewed as a Adobe Portable Document Format (PDF) file

View PDF

Printer Output Window

HATS SERVER

Type 2 - Display LU 2120

Type 1 or 3 - Printer LU 2121

Print PDF

WebSphere software

IBM

▸ For Printer support, the HATS application needs a Printer LU to be associated with the Display LU being used by the HATS application
▸ When a print job is generated the status can be viewed in a Printer Output Window panel
▸ When interacting directly with a host application, an end user activates a physical printer to print data from the application.
▸ When interacting with a HATS application, the end user does not activate a physical printer. Rather, he or she generates an Adobe Portable Document Format (PDF) file, which can be displayed in a Web browser. The file can also be printed using the browser's print capabilities.

WebSphere software

IBM

*e* business software

Host Access Transformation Server
HATS Tutorial
Module 1

HATS Installation Requirements

IBM Software Group

▶ HAT Installation Requirements

## HATS Studio Requirements / Browsers

- **Hardware Requirements**
  - ► HATS Studio runs on any machine on which WebSphere Studio is supported
  - ► Pentium II or higher processor, 500 MHz or faster (1 GHz recommended)
  - ► A minimum of 384 MB RAM (512 MB recommended)
  - ► 200 MB DASD (1 GB recommended)
  - ► A high-resolution graphic display with a minimum screen resolution of 1024x768
- **Software Requirements**
  - ► HATS Studio requires Windows 2000 SP2 or Windows XP and at least one of the following:
    - – WebSphere Studio Site Developer 4.03
    - – WebSphere Studio Application Developer 4.03
    - – WebSphere Studio Application Developer Integration Edition 4.1
- **Supported Browsers**
  - ► Windows - Netscape 6.0 or higher, IE 5.0 or higher (Host keyboard support feature requires Netscape 6.0 or higher)
  - ► AIX - Netscape 4.72 or higher
  - ► Solaris - Netscape 4.72 or higher

WebSphere software

IBM

---

- ► The HATS Studio Hardware and software requirements are listed here along with the supported browser versions
- ► HATS studio runs on any machine on which the WebSphere Studio is supported
- ► A pentium II class machine or higher with 1GHZ processor is recommended
- ► A minimum of 512 MB RAM recommended
- ► The HATS Studio requires either Windows 2000 SP2 or Windows XP and at least one of the following:
  - ► WebSphere Studio Site Developer 4.03
  - ► WebSphere Studio Application Developer 4.03
  - ► or WebSphere Studio Application Developer Integration Edition 4.1
- ► Supported Browsers  are listed here
  - ► Windows - Netscape 6.0 or higher or IE 5.0 or higher
  - ► AIX and Solaris  - Netscape 4.72 or higher

**Requirements for running HATS Applications**

- Required level of WebSphere (one of the following)
  - ► WebSphere Application Server Advanced Edition Version 4.03 or higher
  - ► WebSphere Application Server, Advanced Edition, Single Server Version 4.03 or higher
- In addition to the hardware prerequisites listed in the WebSphere Documentation Center, the following disk space is required to run HATS Server:
  - ► AIX, 23 MB
  - ► Solaris, 21 MB
  - ► Windows NT and Windows 2000: 40 MB
- Operating system (one of the following)
  - ► AIX Version 4.3.3 (4330-07 maintenance level) or higher
  - ► Solaris V7 or higher
  - ► Windows NT Server 4.0 with Service Pack 6a
  - ► Windows 2000 Server with Service Pack 1 or 2
  - ► Windows 2000 Advanced Server with Service Pack 1 or 2
- HATS Server supports any Web server that is suppored by WebSphere Application Server 4.03 and above.

WebSphere software

IBM

- ► Requirements for running HATS Applications are listed on this slide
- ► Specific Server model numbers and feature codes, as well as hardware prerequisites, are listed in the WebSphere Documentation Center for your operating platform on the IBM WebSphere web site

► Lets now take a look at the WebSphere Studio workbench with the HATS Studio
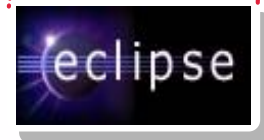
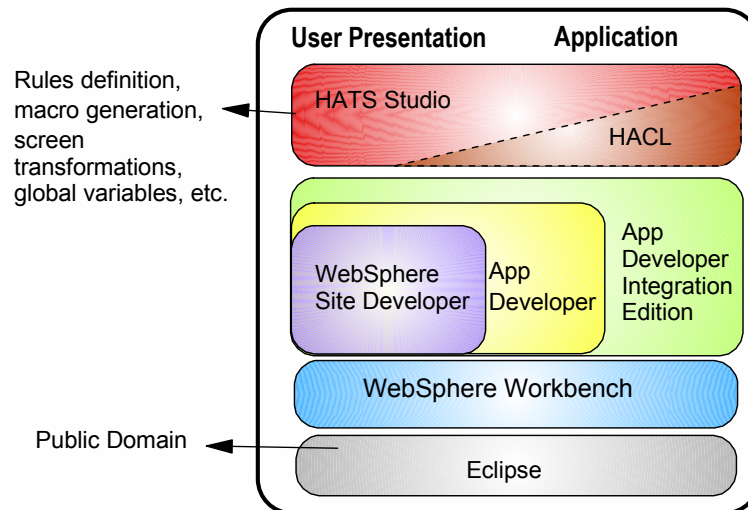WebSphere Studio Workbench with HATS Studio plugin
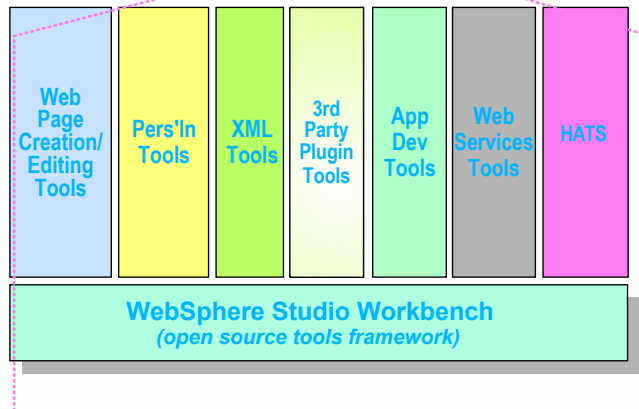
- ► The WebSphere Studio workbench is based on Eclipse technology
- ► IBM is an active member of the consortium of adopters of this technology
- ► HATS Studio is a plugin to the WebSphere Studio workbench

HATS Studio - Tool that Understands Host Applications

User Presentation    Application

Rules definition, macro generation, screen transformations, global variables, etc.

HATS Studio
HACL

WebSphere Site Developer
App Developer
App Developer Integration Edition

WebSphere Workbench

Public Domain

Eclipse

WebSphere software

IBM

- ▸ The HATS Studio tool understands Host applications
- ▸ The HATS studio is where the application developer will apply rules to the application, generate macros, generate screen transformations and customize the HATS application
- ▸ All the steps in developing a HATS application are performed using the WebSphere Studio workbench which is the main foundation for the WebSphere Studio products

# WebSphere Studio Workbench
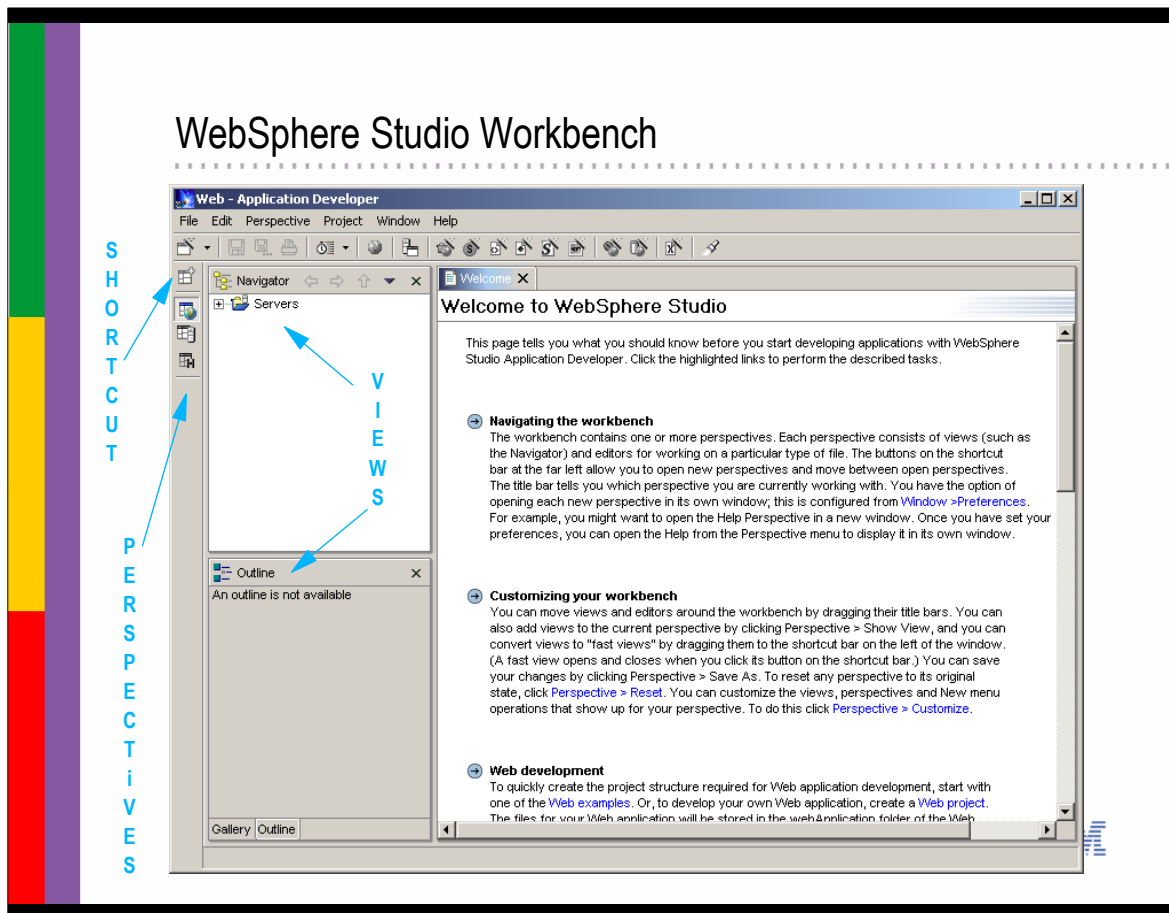


- ► The workbench is a graphical environment that launches wizards, displays lists of resources, and provides navigation tools.
- ► When you start the workbench, you see a single window in which one or more perspectives are displayed. A perspective contains views, like the Navigator, and editors. More than one perspective can be open at a time.
- ► At the far left of the workbench window is a shortcut bar that allows you to open new perspectives and move between perspectives that are already open. The name of the active perspective displays in the title of the window, and the shortcut bar contains icons associated with the active perspective.

Workbench Perspectives List

- Multiple Perspectives can be open in the workbench at any one time
- For HATS applications you just need to use the HATS Perspective

WebSphere software

IBM
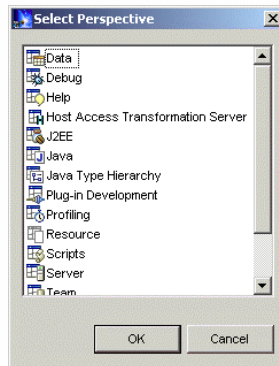
► There are several Perspectives that can be used with WebSphere Studio
► Multiple perspectives can be open in the workbench at any one time
► For HATS applications you just need to use the HATS perspective

## HATS Perspective and Welcome Page



- ► The HATS pespective is the user interface and integrated development environment (IDE) in WebSphere Studio from which you launch wizards, display lists of resources, and use navigational tools to build your HATS application.
- ► It also contains help information about both HATS and WebSphere Studio
- ► The HATS perspective is a collection of views and editors that allow you to create, edit, view, and run resources which belong to a specific HATS application
- ► The HATS Welcome page guides you through the process of developing a Web application using HATS
- ► As you develop the application and customize it, it is known as a project
- ► When you assemble the project into a J2EE-compliant .ear file, it becomes a WebSphere application
- ► The application can then be transferred to a server and deployed there

HATS Perspective Wizards

- Create HATS Project
- Open HATS Host Terminal
- Create HATS Screen Customization
- Create HATS Transformation
- Create HATS Template
- Run On Server
- Open HATS Welcome Page

WebSphere software

IBM

▸ Some of the major HATS wizards Icons are shown here
▸ You will use these wizards to build and customize the HATS application
▸ These will be covered in depth in the subsequent tutorial modules

Host Access Transformation Server
HATS Tutorial
Module 1

Basic HATS Studio Scenario Using Default Template

IBM Software Group

► Basic HATS Studio scenario using a default template

Basic HATS Application Steps

- 1) Launch HATS Studio
- 2) Launch Create HATS Project wizard
- 3) New Project panel
  - ► Give your project a name and description and click next
- 4) Connection Settings panel
  - ► Enter the Host name and set the type, either 3270 or 5250 and click next
- 5) Select Default Template panel
  - ► Select a default template to use for this project and click Finish
  - ► Project files will be built and return to the HATS project view
- 6) Run-on-Server to test

WebSphere software

IBM

---

► These steps represent the tasks that you would need to do to configure a connection and use a default template for a HATS application
► Once these steps are accomplished, the application could be packaged in a J2EE ear file and transferred and deployed on the WebSphere Application Server and made available to a web user.
► Then customization can be done on an iterative basis later after the application is already up and available for end users
► We will cover these steps in the next set of slides and then in module 2 of this tutorial you can actually follow along and make a connection to a publicly available host as a lab exercise using HATS

▸ You launch HATS Studio by navigating through the

▸ START > PROGRAMS > IBM WebSphere HATS > HATS
Studio

Click on "launch the Create HATS Project Wizard" link from the Welcome page
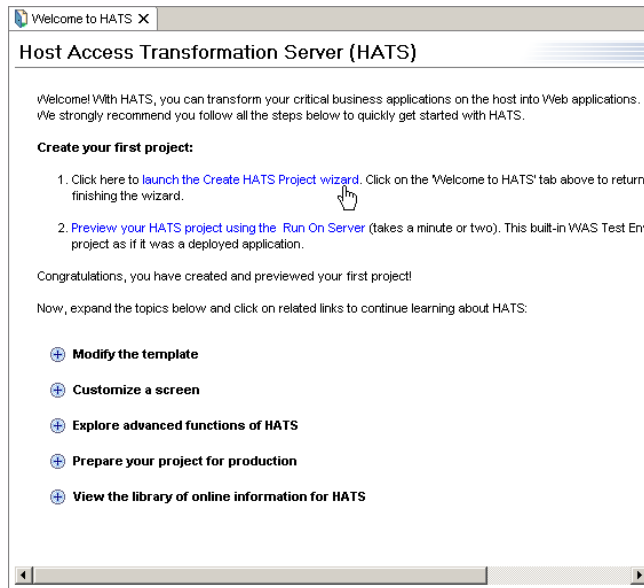
► From the Welcome to HATS page you start a new HATS project by clicking on Launch the Create HATS project wizard link

► This will cause the New Project Panel to load

New Project panel
Provide a Project Name and Description

► From the New Project panel the application developer would provide a project name and description and click Next

Connection Settings panel - configuration settings

- ► On the Connection Settings panel the application developer provides a host name and type of host, 5250 or 3270 connection
- ► Code page and screen size can also be set here
- ► Clicking on Finish when done

Select Default Template
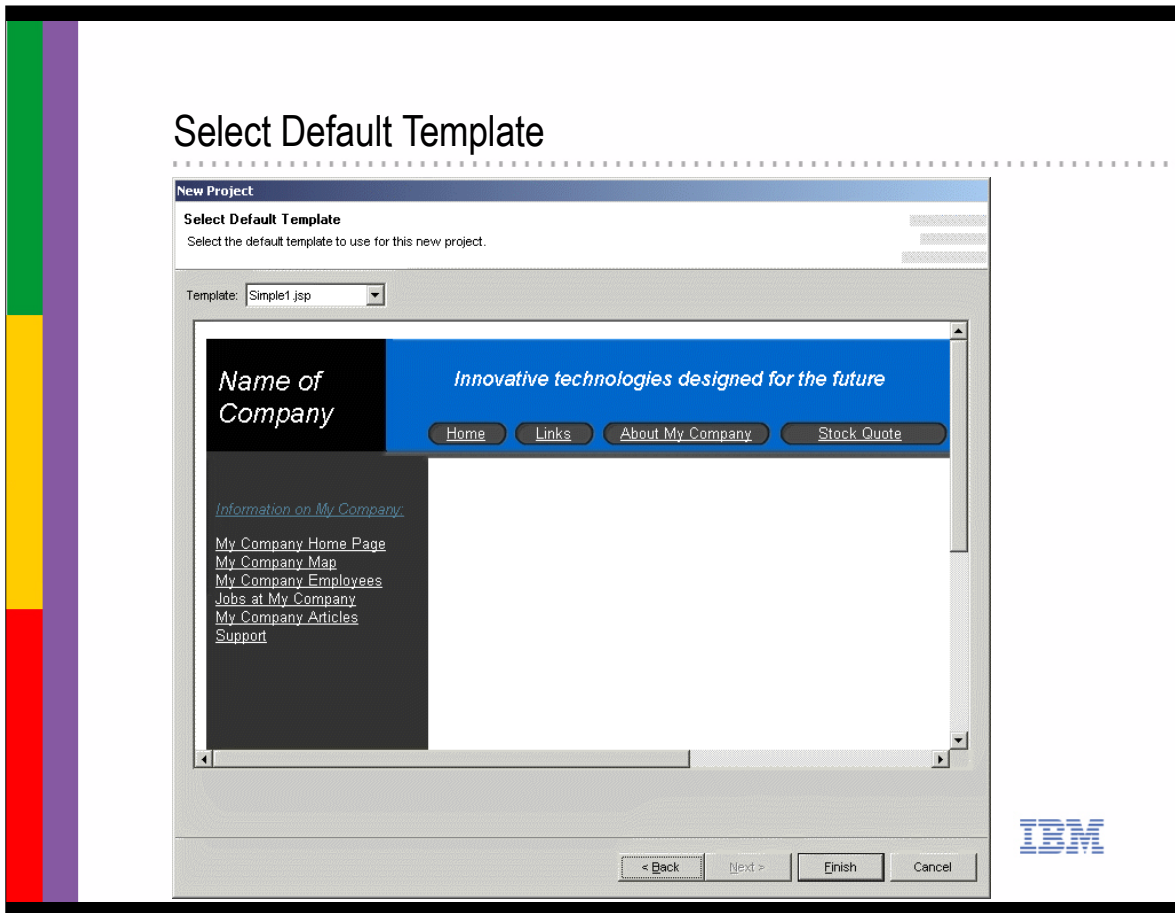
- ▸ The Select Default Template page will then be displayed
- ▸ Select a default template from a list of provided templates
- ▸ HATS will provide a list of several predefined templates to use
- ▸ Some of these include:
  - ▸ Simple JSP as shown here
  - ▸ Classic Terminal JSP for green screen look in the browser
  - ▸ or blank JSP from which you could customize to your own requirements

HATS Project View with project folders
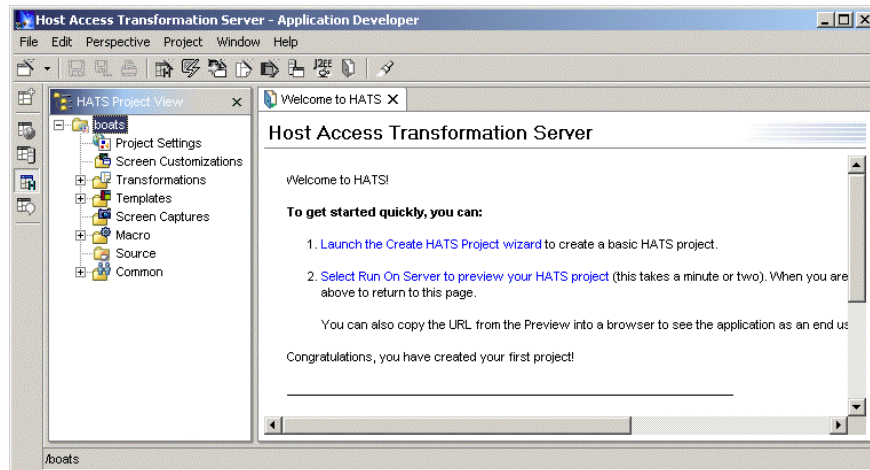
- ► Then the project would be built in the studio and when finished building the project folders will be shown in the HATS project view
- ► These few steps we have just covered is all that is necessary to now test the application
- ► You could deploy the application as is now, using the default template that was selected, and it would be applied to all screens that the user navigates through, but most likely you want to customize the template for your company name and web site links
- ► Customizing the template will be covered in a section following this one
- ► Now lets look at testing the application in the WebSphere Studio

HATS Run on Server - Local WAS Test Server
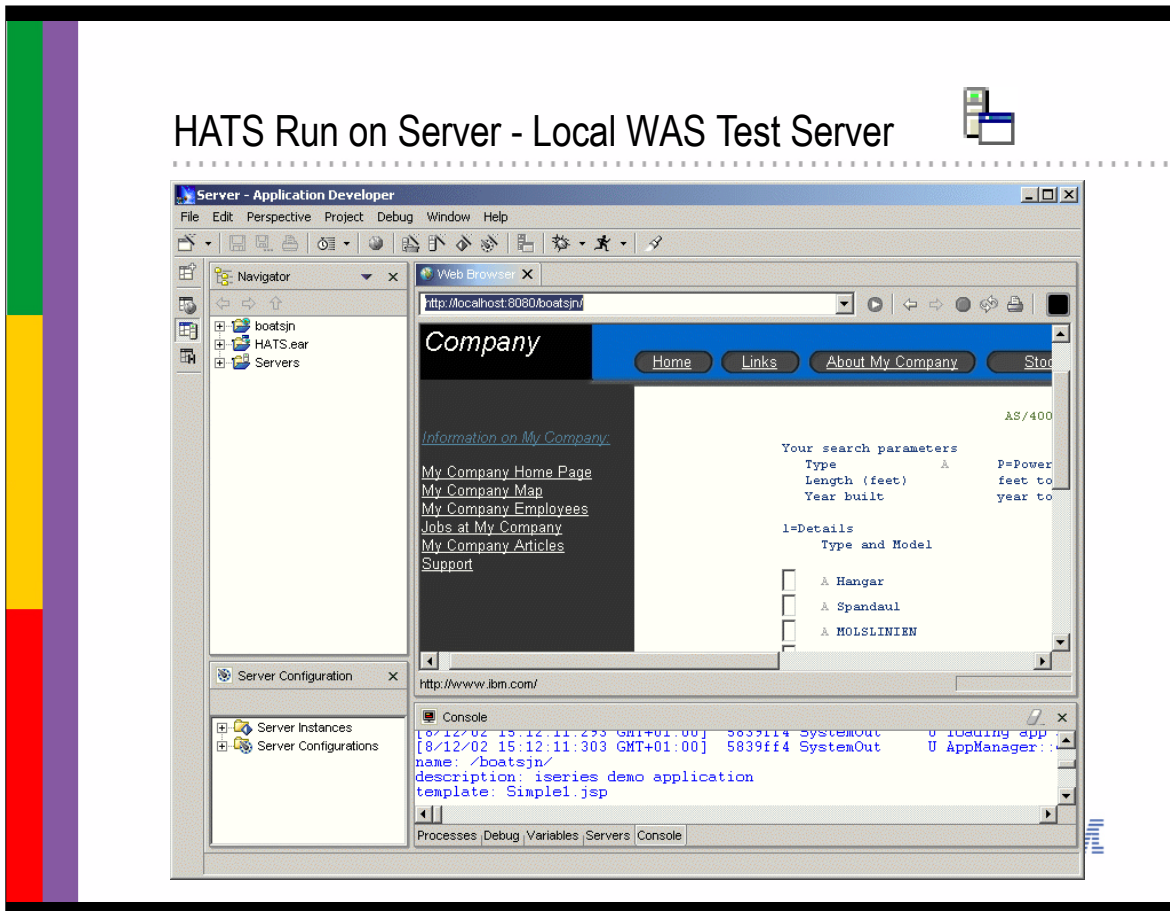
- ▸ The next logical step might be to actually run the application and test it
- ▸ This can be done from within WebSphere Studio using the WebSphere Studio Run on Server option, which runs a local copy of WebSphere in the WAS Studio and allows you to test the application just like it would run on WebSphere server
- ▸ You would simply click on the Run on Server link from the HATS Welcome page
- ▸ Then the WebSphere Test server will be loaded within the WebSphere Studio and a Server perspective will come up with a browser that will load automatically the URL needed to start the application
- ▸ The user can then use the browser to interact with the application in real time and test it, navigating through the screens and see how the default template for the application is being applied to the host screens

WebSphere software

IBM

*e* business software

Host Access Transformation Server
HATS Tutorial
Module 1

Modifying the Default Template

IBM Software Group

▶ In this section we will look at the steps to modify the default
template to customize it with your company information
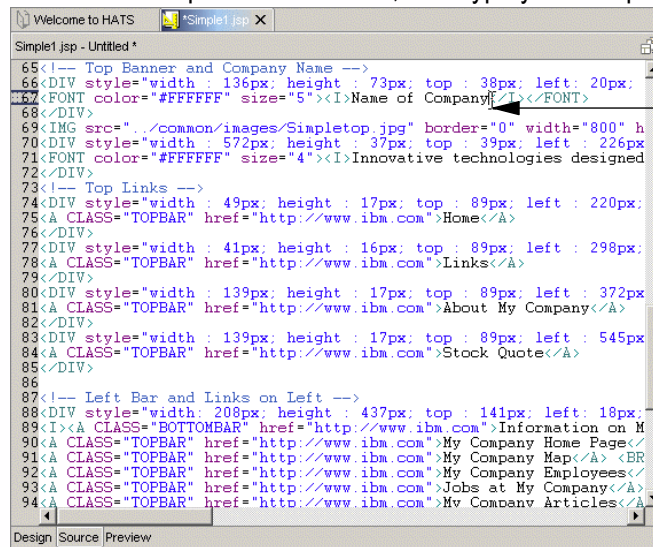
# Welcome page - Modify the template steps
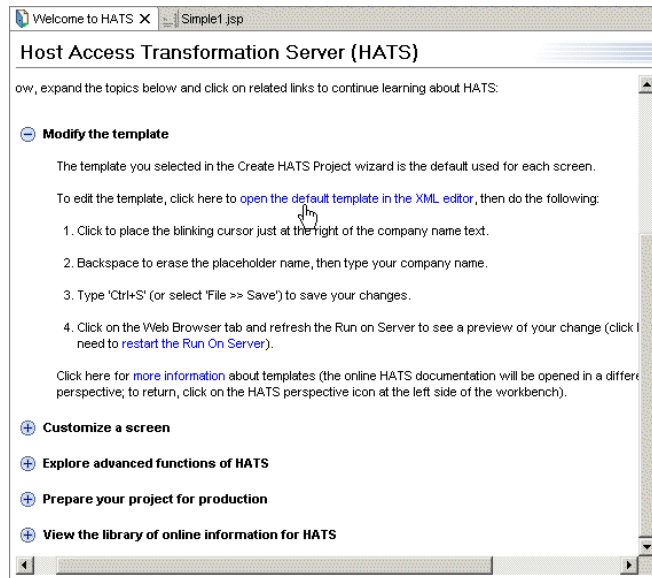


▶ With the project hightligted in the HATS Project View, Click on *open the default template in the XML editor link* in the Modify the template section of the HATS Welcome page

Template opened in XML Editor

- Click to place the blinking cursor just at the right of the company name text
- Backspace to erase the placeholder name, then type your company name

► This will open the template in the XML editor
► Click to place the blinking cursor just at the right of the company name text
► Backspace to erase the placeholder name, then type your company name
► Type 'Ctrl+S' or select File >> Save >> to save your changes
► You can now click on the refresh button on the web page in the web browser and see your changes to the template

Modified Default Template in web browser
My Company change to Ultra Marine Boats
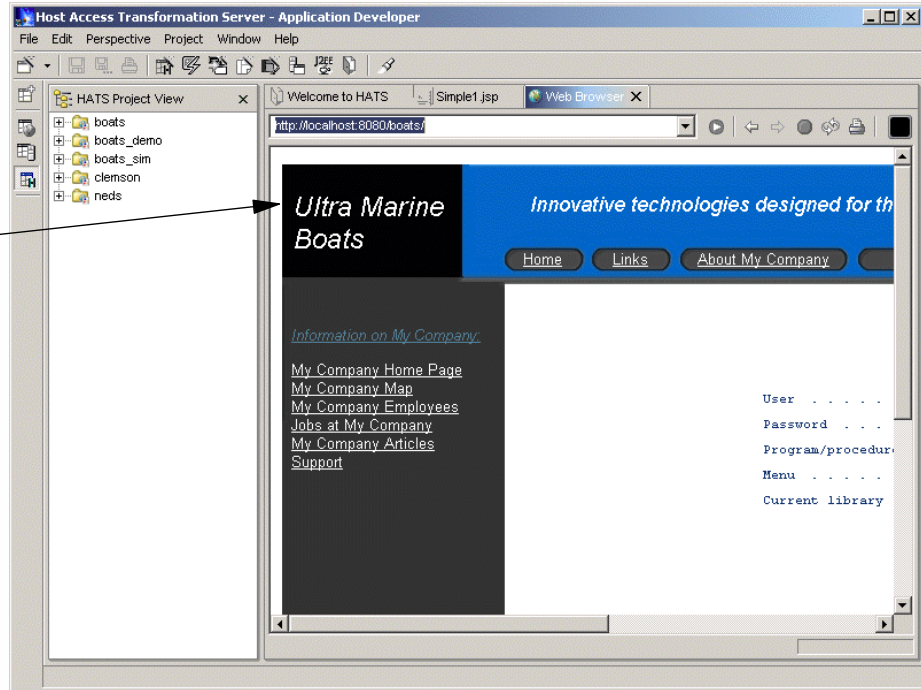
► Once you refresh the page the modified default template should now be displayed with your modifications
► Other changes can be made to the the templates using the XML editor window and clicking on the refresh button

WebSphere software

IBM

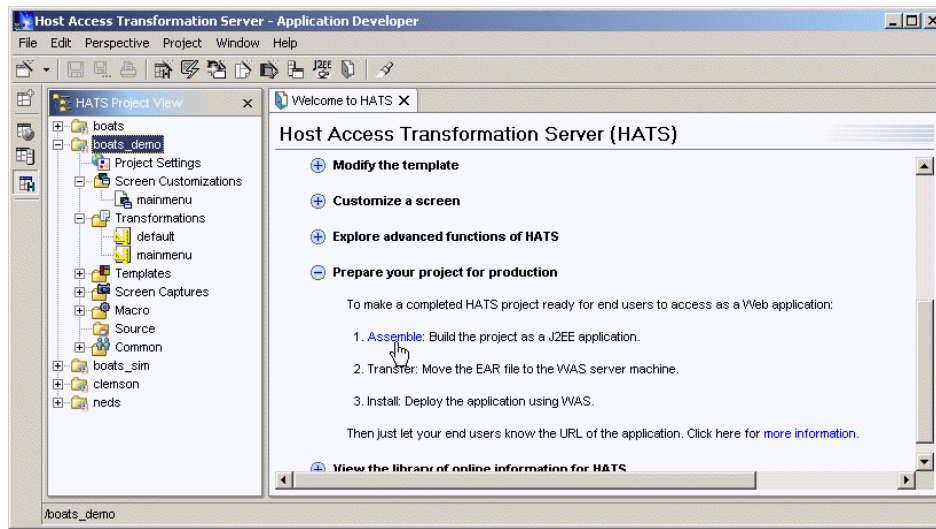Host Access Transformation Server
Early Education
Module 1

*e* business software

HATS Application Assembly Steps

IBM Software Group

▶ In this section we will look at the steps to deploy the HATS application to the HATS server
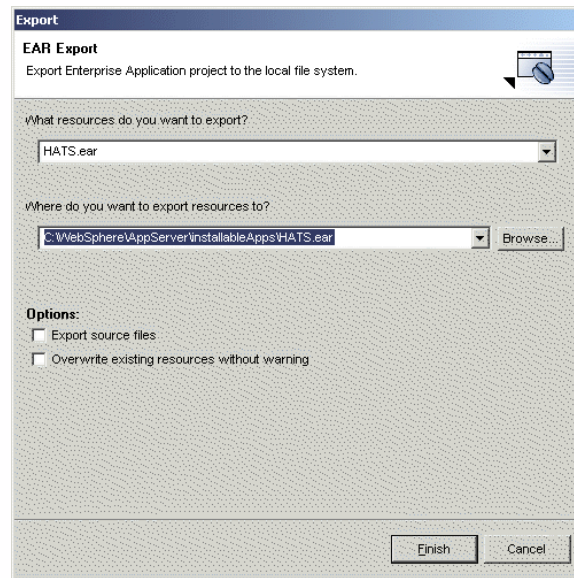
Prepare your project for production - Assemble link

► From the Welcome page with your project highlighted in the HATS Project View
  ► Click on the Assemble link in the Prepare your project for production section

EAR Export panel

- HATS EAR exported to installableapps directory on WebSphere Application Server

▸ THe EAR Export panel will come up

▸ Specify HATS.EAR for the resource to export

▸ Provide the path to the installableapps directory, if you have WebSphere on the same workstation as the WebSphere Studio, and Click Finish

▸ If the WebSphere Application Server is not on the same machine that the WebSphere Studio is installed on then copy the HATS.EAR to the installalableapps directory on the WebSphere application server where you want to run the application
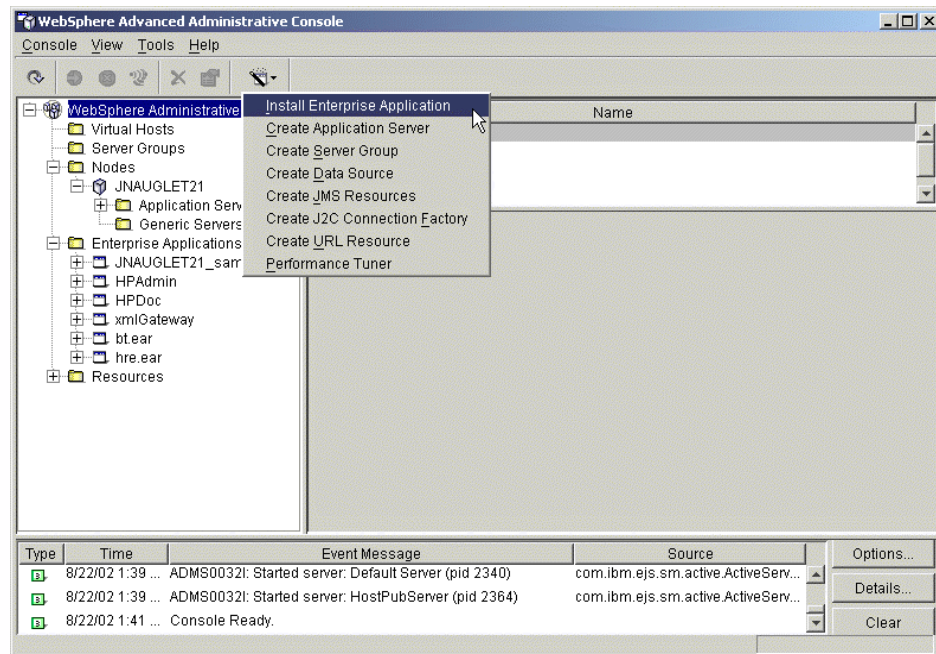
- ► Use the Install Wizard in the WebSphere Application Server Console to install the HATS.EAR application onto the WebSphere / HATS server just like you would install any other EAR application
- ► After the installation is completed you will need to Start the EAR Application and do a Regen the webserver Plugin step
- ► Then provide the end user with the URL to the application

Host Access Transformation Server
HATS Tutorial
Module 1

Conclusion

IBM Software Group

► Now lets summarize what you we have covered in this first module

## Summary - Key Features

- HATS Studio - WebSphere Studio plugin - Wizards
- HATS Server - HATS.EAR Runs of WebSphere
- Default Transformations - easy/ quick GUI web-like look
- Customization of screens can be done on iterative basis
- Keyboard Support - fully customizable
- Print Support - Associate Printer sessions, PDF output
- Global Variables - flexibility to use variables in any way
- Macro support - enhance navigational capability
- Customer Business Logic Enabled
  - ► Java Beans could be used for added business logic
- WebSphere Portal Support

WebSphere software

IBM

---

- ► The Key Features of HATS are listed here
- ► Host Access Transformation Server along with WebSphere and WebSphere Studio tools are a very powerful set of tools that will allow you to very quickly extend legacy applications to web browser users

## Conclusion

- This module introduced you to HATS and showed you the steps to
  - ► Build a basic HATS project in the HATS studio
  - ► Configure a HATS project
  - ► Apply a default transform to the project
  - ► Run the application on the WSxD server (Run on Server)
  - ► Customizing the default templates
  - ► Assemble the HATS application for installing on the WebSphere application server
- Module 2 will cover basic implementation steps with a live host connection that you should be able to connect to and use while following the tutorial
- Module 2 will cover these major topics in lab exercise format
  - ► Configuring a HATS application
  - ► Applying  default transformations to screens
  - ► Using macros
  - ► Applying GUI widgets to transform JSPs

WebSphere software

IBM