IBM eServer™ iSeries™

Enhance Your 5250 GUI Access with HATS LE

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Agenda

HATS LE

- **Packaging / Ordering**
- **System requirements**
- **How to set up**

Abstract:

Did you know that HATS Limited Edition is included in the iSeries Access Family product?

HATS Limited Edition is an on-the-fly 'green screen eliminator' that requires no programming to use. Simply install it and see how your users can work with all their iSeries screens and applications in a modern, GUI view. These products eliminate PC network administration and desktop configuration as everything runs on the iSeries and only sends HTML to the browser.

You will also hear how HATS LE compares to HATS and iSeries Access for Web. By the end of this session, attendees will be able to:

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

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What is HATS LE?

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Host Access Transformation Server Limited Edition (HATS LE)

Part of iSeries Access Family - 5722-XW1

- **Available 6/30/03**
  - Automatically ships with new orders for 5722-XW1
  - Existing iSeries Access Family customers (at V5R1 or V5R2) can order no-charge Feature Number 2646 of 5722-XW1 to receive HATS LE

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iSeries Access Family - Packaging

V5R2 5722-XW1 iSeries Access Family	V5R1 5722-XW1 iSeries Client Access Family
• 5722-XE1, V5R2 iSeries Access for Windows	• 5722-XE1, V5R1 AS/400 Client Access Express for Windows
• 5722-XH2, V5R2 iSeries Access for Web	• 5722-XH1, V5R1 iSeries Access for Web
• 5724-B81, V4.0 & V4.01 WebSphere Host Publisher for iSeries	• 5648-E25, V3.5 WebSphere Host Publisher for iSeries
• Starting 6/30/2003 5724-D34-01 HATS Limited Edition for iSeries	
	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

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HATS Limited Edition

Runs in a browser
- Delivers HTML to the desktop
- Only software needed on the client is a Web browser
- Uses browser SSL features

Works on all 5250 screens
- Stock Templates included so you can quickly personalize your web page to your company look and feel

Screens are converted on the fly, in real time
- Selection lists can be converted to hot links, buttons, drop-down menus, or option lists (radio buttons)
- PF keys are can be converted to buttons or hot links

No programming necessary
- Doesn't break if changes are made to 5250 application
- No need to access source code

A quick and easy way to put iSeries applications on the Web

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Notes: HATS LE overview

HATS LE is a reduced-function version of HATS V4. HATS LE is delivered in the form of a J2EE enterprise application. Customers will need to install this application on their application server. Once the application has been installed, started, and configured, web browser clients will be able to connect to and use it.

HATS LE is targeted for a lower skill set by eliminating the dependence on needing to use WebSphere Studio client tools to set up and run it. HATS LE gives customers the ability to quickly get their host applications to the web by reducing the number of steps to configure the application, removing the requirement to install and understand WebSphere Studio client tools, and removing the complexity of customizing screens. HATS LE does not require administrators to have any HTML or Java skills.

HATS LE provides a new HTML-based Configuration Wizard to allow the administrator to set connection parameters, configure templates (including the ability to add corporate logos), and to change the default transformation settings. HATS LE uses the existing default transformation from the standard HATS V4, and there is no ability to create custom transformations. The Configuration Wizard is based on the HATS V4 Studio Project Wizard and Editor.

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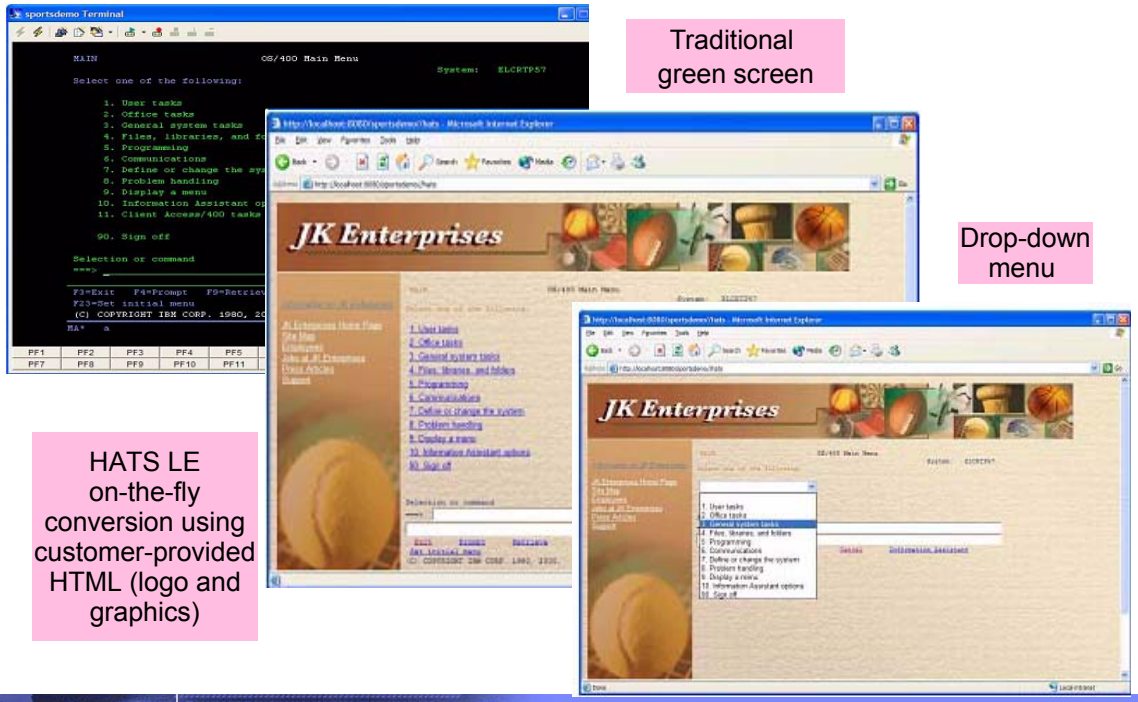
HATS LE: Real-time Screen Conversion



Traditional green screen

Drop-down menu

HATS LE on-the-fly conversion using customer-provided HTML (logo and graphics)

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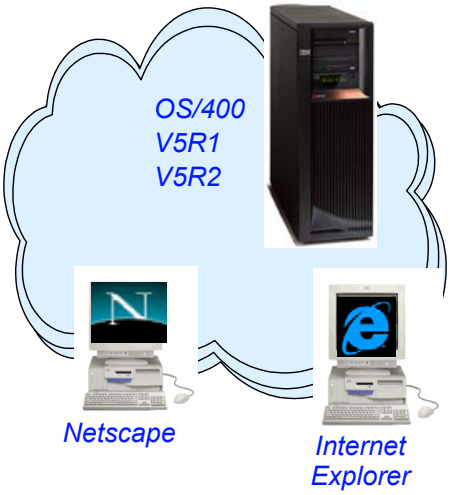
Client and Server Requirements

HATS LE can be installed on iSeries on any of the following web application servers:

- WebSphere Application Server Advanced Edition 4.043 and higher
- WebSphere Application Server Advanced Edition Single Server 4.03 and higher
- WebSphere Application Server Version 5.0
- WebSphere Application Server Version 5.0 Express

HATS LE can be accessed from any of the following browsers:

- Netscape 6.0 or later
- Internet Explorer 5.0 or later
- Netscape 4.72
  - Function keys not supported



Can run on any desktop operating system that has Netscape or Internet Explorer supported browsers

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HATS LE - server/client requirements

Server Requirements

HATS LE is designed to run on any platform supported by HATS V4, however, testing will be limited to iSeries only. The following application servers are supported:

- WebSphere Application Server Advanced Edition 4.043 and higher
- WebSphere Application Server Advanced Edition Single Server 4.03 and higher
- WebSphere Application Server Version 5.0
- WebSphere Application Server Version 5.0 Express

Client Browser Requirements

Clients connecting to HATS LE will have the same browser requirements as those users connecting to a standard HATS application:

- Netscape 6.0 + and IE 5.0 +
- Netscape 4.72 (no Function Key keyboard support)

HATS LE administrators will have the same browser requirements as client browsers connecting to the application.

Internationalization

- GB18030 phase 1 certification.
- Support for all languages and code pages at runtime.
- BiDi support
- DBCS characters will be supported in the customization wizard as well as connecting to DBCS codepage host applications.

The web- accessible Administrative Console, and Configuration Wizard will be translated into the following Group 1 languages:

- English
- French
- German
- Spanish
- Italian
- Portuguese/Brazilian
- Japanese
- Traditional Chinese
- Korean
- Simplified Chinese

Portlet Support

HATS LE does not run in the WebSphere Portal Server. You need to upgrade to HATS to take advantage of portals.

Online Help and Documentation

The following online information will be provided:

- Readme/installation. PDF and HTML.Translated
- Online help for wizard/dialog panels. HTML.Translated.

Online help is available on all pages of the Configuration Wizard and, the Administrative Console, and the Application Builder. Context sensitive help will not be supported (as it currently exists in the HATS Studio) because this concept is not consistent with normal web-based applications. A link on each wizard panel will open online help for that panel in a new window. A readme file, specific to HATS LE will be available to the administrator in the Administrative Console and to the user prior to installing the product.

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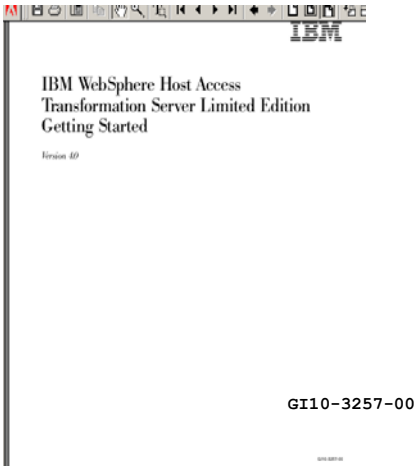
Getting Started

Install the HATS4LE.ear file on your iSeries server

- HATS LE is shipped on a separate CD called "iSeries Access Refresh - Host Access".HA
  - Refer to the 'HATS LE Getting Started' documentation and README for installing
  - These are on the CD and can also be downloaded from the iSeries Access HATS LE web page at www.ibm.com/eserver/iseries/hatsle
- Start the WebSphere Administrative Console, find the HATS4LE.ear file and install it under WAS
  - Can then go ahead and Configure HATS LE



Download the latest Fix Pack from the web

- This service update needs to overlay the existing, installed HATS LE
  - The HATS LE configuration will not be overwritten in this process. It is recommended, however, that you back up your existing configuration by using the Package feature in the HATS LE Admininistrative Console (under Advanced).

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Get the latest fix pack

Download the latest Fix Pack from the web

- **This service update needs to overlay the existing, installed HATS LE**
  - The HATS LE configuration will not be overwritten in this process. It is recommended, however, that you back up your existing configuration by using the Package feature in the HATS LE Admininistrative Console (under Advanced).

Web site to get HATS LE fix packs

- **http://www.ibm.com/support/**
- **Select 'Software', then key in 'hats le fix pack', then select Host Access Transformation Server Limited Edition Cumulative Fix Pack 4.0.3**
  - There are also a Fix Pack 4.0.2 and 4.0.1. All the fixes are in the latest fix pack

Or go to iSeries Access HATS LE web page

- **http://www.ibm.com/eserver/iseries/hatsle**
- **Click on link to HATS LE fix packs**

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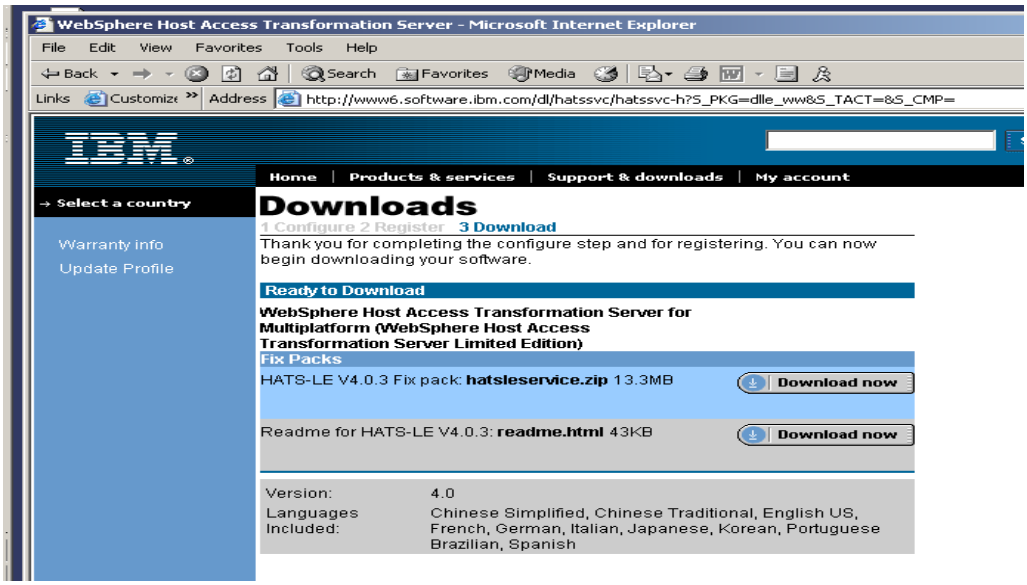
Web page to download HATS LE latest fix pack...



Go to: https://www6.software.ibm.com/dl/hatssvc/hatssvc-p

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Notes: Getting Started

Copying the HATS4LE.ear file to your iSeries server

To install HATS LE, you will use the file /HA/HATS4LE/HATS4LE.ear on the CD titled "iSeries Access Refresh - Host Access". HA is the volume identifier. The first task required to install HATS LE is to move this file from the CD to your iSeries server.

You can either place the HATS4LE.ear file in the InstallableApps directory for your WebSphere Application Server, or create a new directory. For example, for WebSphere Application Server-Express for iSeries, Version 5.0:

- You could copy HATS4LE.ear to QIBM/UserData/WebASE/ASE5/<instance>/InstallableApps, where <instance> is the name of the application server instance on which you are installing HATS LE.
- As an alternative, you could create a temporary directory that will be easier to browse to, and copy HATS4LE.ear to that temporary directory.

If you prefer, you can map a Windows network drive to your iSeries machine. This facilitates copying files to and from your iSeries machine. Refer to http://www.ibm.com/servers/eserver/iseries/netserver/ for information on how to start the NetServer and create shares.

Start the WebSphere Administrative Console.

- In the left column, right click Install Enterprise application.
- Under Install application (*.ear), browse and find HATS4LE.ear.
- Continue clicking Next until you reach the Completing Installation screen. Click Finish
- HATS4LE.ear will be displayed in the list of applications on the left. Right click HATS4LE.ear and select Start.
- Under Nodes in the left column, right click the iSeries server where you have installed HATS LE and select ***Regen Webserver Plugin***.

HATS LE Fix Packs

This service update is packaged in the form of an archive which needs to be overlayed over your existing, installed HATS Limited Edition application.

Your application's configuration will not be overwritten in this process. It is recommended, however, that you back up your existing configuration by using the Package feature in the HATS LE Admininistrative Console (under Advanced).

To install this service update, you must first stop your HATS Limited Edition application. Once stopped, following these instructions:

1. Unzip the included service archive (hatsleservice.zip) at the root of your installed application. For example, in WebSphere version 5.0, your HATS LE application will be installed under installedApps\{cellName}\HATS4LE.ear. Depending on your dearchiving tool, you may be prompted to overwrite existing files; choose to overwrite these files. If you receive an error message indicating any file you are attempting to overwrite is locked, you will need to stop the application server instance where your HATS LE application is installed.

2. Restart your HATS LE application, navigate to the HATS LE Administrative Console and confirm the version now reads you Fix Pack level.

This service document will appear in the list of documents in the Help section of the Administrative Console.

Files included

- hatsleservice.zip - contains changed files
- service.html - this readme document

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Fixes that require Administrator action...

New Capability	Modification Needed
Ability to define which template gets applied when users press the 'Default' button located in the application keypad. Previously when a user pressed this button, the application's default template was applied	Add the following setting to the com.ibm.hats.common.ApplicationKeypadTag section in your application settings (application.hap) file: • <setting name="defaultTemplate" value="ClassicTerminal.jsp" /> • Where the "value" attribute specifies the template to be applied.
Many 5250 screens have informational and error messages that appear on the last line of the screen. By default, HATS displays this message as a link. Can now remove this link so users will not see message information	A new property to the DefaultWidget, substituteHelpLink, will not display the message within a link. Edit the following setting: Go to the HATS LE Admin, click Advanced, then click Edit) and add the following setting to the Default Widget settings area: • <class name="com.ibm.hats.widget.DefaultWidget"> • <setting name="substituteHelpLink" value="false"/>
Some screens have extraneous leading and trailing spaces in input fields. Also, when using the stripUnderlinesOnInputs option in the default widget, it removes the underline characters from the input field, but doesn't remove the spaces. New property added to 'trimSpacesOnInputs' default widget so when set to 'true' will also trim the spaces from the input fields and will not be restored.	New property for project settings file: • <setting name="trimSpacesOnInputs" value="true"/> Insert the above line after • <class name="com.ibm.hats.widget.DefaultWidget"> in the source of the project settings (application.hap file) to apply this to the Default Widget.
HATS LE need a <base href="..." /> tag on every page to tell the browser where it needs to resolve relative links on the page. Now you can override the scheme (ie,. "http" or "https") of the URL that is generated. This allows you to have a network configuration where the scheme between your end users' browsers and the HTTP server is different than the scheme between your HTTP server and WebSphere Application Server.	To override the scheme, change the following line in your template JSP file: • <HATS:Util type="baseHref" /> to: • <HATS:Util type="baseHref" settings="scheme:https" /> where "https" is either "http" or "https" depending on your network configuration.
A change has been added to allow you to configure which template is applied when your users press the "Default" button (located in the application keypad). Previously when a user pressed this button, the application's default template was applied to the "default_transformation.jsp" transformation.	To select the template that gets applied when this button is pressed, add the following setting to the com.ibm.hats.common.ApplicationKeypadTag section in your application settings (application.hap) file: • <setting name="defaultTemplate" value="ClassicTerminal.jsp" /> Where the "value" attribute specifies the template to be applied.

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Notes: Problems fixed in Fix Pack 4.0.3 -- 11/3/03

26567 - SUBFILE: Accented characters being rendered twice

- Accented characters will be rendered twice in subfile widget.

26776 - Miscalculate action filed for SubfileActionExtract

- The following will happen in such a situation. Example:
- " Some descriptions in other color 1=action1 2=action2"
- Before the subfile actions there are some descriptions which have different color with subfile actions in the same line. If we turn on color criteria for subfile action, we cannot recognize the actions successfully. Because we mis-calculate the action filed for the subfile actions.

IC37290 - Scheme override available in tag

- A <base href="..." /> tag is embedded on every page that HATS processes (while running on WAS). This tag tells the browser where to find images, stylesheets, and Javascript files from. This tag is necessary because the browser thinks the page coming from the server is at a level equivalent to: http://myservername/myprojectname/entry, whereas the template has links that assume the template is at a level equivalent to: http://myservername/myprojectname/templates/myTemplate.jsp. Without this <base href="..." /> tag to tell the browser where it needs to resolve relative links on the page to, the page fails to load correctly because linked files cannot be loaded.
- Beginning with HATS 4.0.5, you can override the scheme (e.g. "http" or "https") of the URL that is generated. This allows you to have a network configuration where the scheme between your end users' browsers and the HTTP server is different than the scheme between your HTTP server and WebSphere Application Server. To override the scheme, change the following line in your template JSP file: <HATS:Util type="baseHref" /> to: <HATS:Util type="baseHref" settings="scheme:https" /> where "https" is either "http" or "https" depending on your network configuration.

IC37258 - Default Widget doesn't trim spaces on input fields

- Some customer screens have extraneous leading and trailing spaces within HATS-rendered input fields which they would like removed. Also, when using the stripUnderlinesOnInputs option in the default widget, it removes the underline characters from the input field, but doesn't remove the spaces.
- To resolve this problem, a new property, trimSpacesOnInputs, was added to the default widget, which when set to true, will also trim the spaces from the input field. Note this option is independent of the stripUnderlinesOnInputs option.
- Note you can also add this parameter on any HATS component tag that you insert into a transformation if you don't want this at a global level.
- New property for project settings file:
- <setting name="trimSpacesOnInputs" value="true"/>
- Insert the above line after <class name="com.ibm.hats.widget.DefaultWidget"> in the source of the project settings (application.hap file) to apply this to the Default Widget. When trimSpacesOnInputs is true, spaces will be removed from input fields and not restored.

IC37183 - Delimiter doesn't work with Menu list.

- The delimiter function did not get implemented for the Menu component.r is at a level equivalent to: http://myservername/myprojectname/entry, whereas the template has links that assume the template is at a level equivalent to: http://myservername/myprojectname/templates/myTemplate.jsp.
- Without this <base href="..." /> tag to tell the browser where it needs to resolve relative links on the page to, the page fails to load correctly because linked files cannot be loaded.

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Notes: Problem fixed in Fix Pack 4.0.3 -- 11/3/03

IC37315 - Input-inhibited host screens cause delay in HATS transformation

- Performance enhancements (made in earlier service levels of HATS v4) to the host screen transformation process have not included those host screens where the input-inhibited indicator is on. Those transformations would always wait for the default delay interval which has a default setting of 1.2 seconds. This has been corrected, and input-inhibited host screens, especially from 5250 hosts, now are transformed by HATS more quickly when possible.

IC37345 - Selected area shown twice using Default Extract Component

- When creating a transformation, and selecting an area on the screen to render with a Host Component, the Default Extract Component would show the selected area twice. This occurs when the selected area overlaps the host screen fields in certain ways.

26391 - Reduce screen settling delay for non-host interactive keys

- Before HATS 4.0.5 and 4.0.3LE, HATS would perform its normal screen settling algorithm every time an aid key was sent from the browser; this operation occurred even for keys that were not sent to the host (some keys pressed by the user are never sent to the host, they are processed internally). HATS now bypasses the screen settling wait time for these keys which decreases the delay experienced by the end user.

27166 - New HATS global variables should not have an initial value of the empty string, "", instead of "null"

- New HATS global variable, created in JSP pages, or in business logic (for example with create getGlobalVariable(x,true)), should not have an initial value of "null". Changed the initial value to the empty string, "".

IC37666 - Data entered in RTL Input fields is not padded with space

- Developer captures RTL screen, and uses "widget orientation" check box and "screen reverse" button in order to enter data. Data is being transferred to host without padding spaces.

IC37579 - HATS DBCS characters not handled correctly

- We can input 4 DBCS characters into an input field with length=10. First, we input "3333" and send back to host. Second, we change all "3333" to "aaaa" and send back to the host. We will get error result "aaa3".

IC37622 - BIDI Function Keys not rendered correctly by HATS Default Component/Default Widget

- Since BIDI function keys can appear from right to left, in some cases they weren't showing up as function keys when using the HATS Default Component and Default Widget.

IC37691 - Single byte fields rendered as incorrect color in Default Component/Default Widget

- When using the default component and the default widget, single byte fields may be shown in an incorrect color. More precisely, the HGRAY CSS style is applied instead of the correct style for the color of the host screen field. Note this problem also occurs in the default transformation in HATS

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HATS LE 4.0.0 - Fix Pack 4.0.2 - Problems Fixed 9/15/03

Turn off 5250 F1 Help link which appears on the last line of the screen

- Many 5250 screens have informational and error messages that appears on the last line of the screen. By default, HATS displays this message as a link. When the user clicks the link, F1 is sent to the host, and the host typically presents more information about this messages to a user.
- Some customers do not want this text turned into a link. To solve this problem, we added a new property to the DefaultWidget, substituteHelpLink, which when set to false, will not display this message within a link. To add this setting, edit your application settings file (go to the HATS LE Admin, click Advanced, then click Edit) and add the following setting to the Default Widget settings area:
  - <class name="com.ibm.hats.widget.DefaultWidget">
  - <setting name="substituteHelpLink" value="false"/>

Subfile not being rendered correctly. HATS is not checking for end markers in the last 2 rows.

- Subfile not being rendered correctly, when the end marker is on the last 2 rows. Code was modified to search the end marker including the last 2 rows.

Cannot turn off auto-submit in Subfile, without button

- User does not want to be forced to add a submit button just to turn off "auto submit" in Subfile widget. Add a new setting "subfileAutoSubmit" to achieve this purpose and the default value is true. Now there are two options "subfileAutoSubmit" and "subfileShowSubmitButton". If "subfileShowSubmitButton" is true, the "subfileAutoSubmit" will be set to false automatically. Users can turn off "auto submit" without a button by adding the option in subfile widget .

Application settings re-ordered every time the application is saved.

- The application settings are re-ordered every time the application is saved. This is annoying to users who want to edit application settings. Code changes were made so the settings are alphabetized. This is much better than the completely random ordering that the file was being read back in and shown.

Allow HATS to do initial entry into application from a POST method

- Originally, entry into the HATS application was only allowed via an HTML "GET" method. This limits the length of passable information to the maximum length of the URL string. Additionally the initial entry data will always be visibly displayed in the URL since it is a GET method and we may want to hide this data such as in the case of a password.
- Resolution: this fix allows entry into the HATS application using a method="POST" type request in the HTML. When using the POST, data is not visible in the URL string, but is available on the server-side by accessing it in the request object. Both methods also support session overrides. Users need to be aware that for override, they must change the pre-defined section in the application.hap (application settings) file that says :
  - <class name="com.ibm.hats.SessionOverride">
  - <setting name="allowAll" value="false"/>
  - </class>
  - since this will take precedence over other overrides and cause them to be ignored. Setting this to true fixes this problem.

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HATS LE 4.0.0 - Fix Pack 4.0.2 - Problems Fixed 9/15/03

Auto Advance

- The ability to have the cursor advance automatically to the next input field on the Web page (once the current input field has been filled) has been added in HATS LE 4.0.2. With this feature enabled, cursor movement will behave more similarly to how it behaves in a typical terminal emulator - once a user has completely filled in a field, the cursor will automatically move to the beginning of the next field.
- By default this feature is enabled. To disable it, add the following lines just after the </HATS:Transform> tag in your default template:
  - <script>
  - autoAdvance = false;
  - </script>

Reset for Locked Screens Feature

- A change has been introduced in HATS LE 4.0.2 which allows for an easier recovery when a host screen becomes locked (i.e. input is inhibited). In 4.0.2 when a host screen is locked, all form elements (text boxes, drop downs, radio buttons, etc) on the generated Web page are disabled (no input will be allowed). This will prevent your user from entering data that will be lost because a locked host screen cannot have data entered into it.
- By default, a "Reset" key now appears on the host keypad.

Changing the Default Template for the Default Transformation

- A change has been added to HATS LE 4.0.2 which allows you to configure which template is applied when your users press the "Default" button (located in the application keypad). Prior to 4.0.2, when a user pressed this button, the application's default template was applied to the "default_transformation.jsp" transformation. To select the template that gets applied when this button is pressed, add the following setting to the com.ibm.hats.common.ApplicationKeypadTag section in your application settings (application.hap) file:
  - <setting name="defaultTemplate" value="ClassicTerminal.jsp" />
  - Where the "value" attribute specifies the template to be applied.

New BIDI functions

- Some new BIDI functions were enabled in HATS LE 4.02. It includes special BIDI support for Numeric fields, Auto Field Reverse and Field Reverse support.
- ----------

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HATS LE 4.0.0 - Fix Pack 4.0.2 - Problems Fixed 9/15/03

Support for Extended Field Attributes

- Fields on 5250 host screens can be marked with specific "check" keywords. Check keywords allow the host application to tell the emulator how certain fields need to react to specific key presses (this key is normally "field exit"). For example, when a field is marked as "auto enter", once a user supplies X number of characters into the field (X being the size of the field), the emulator automatically submits the page back to the host application for processing. Beginning in 4.0.2, HATS LE is aware of these attributes and makes them available to the client browser so that the correct behavior for each field is demonstrated to the end user. Having support for these attributes will reduce the amount of interaction with the HATS LE server and it will also speed up field validation (from an end user's perspective).
- The following 5250 check keywords are supported:
  - Validity checking:
    - AB (allow blanks)
    - ME (mandatory entry), generated text boxes marked with "entryRequired" attribute
    - MF (mandatory fill), generated text boxes marked with "fillRequired" attribute
    - MOD10 (IBM modulus 10 check), generated text boxes marked with "mod10" attribute
    - MOD11 (IBM modulus 11 check)generated text boxes marked with "mod11" attribute
  - Keyboard control:
    - RB (right fill w/blanks), text in field is right-filled with blanks when user leaves the field
    - RZ (right fill w/zeros), text in field is right-filled with zeros when user leaves the field
    - ER (auto enter on field completion), form is automatically submitted (back to the HATS server) when the field is filled
    - LC (allow lowercase characters), lowercase characters are not converted to upper case (if enabled)
    - FE (field exit required), user is required to press a field exit key to leave the field (5250 only).
  - A field on a host screen can also be marked to only allow a certain type of input. For example, the user name and password field on a typical iSeries Sign On screen only allows uppercase letters and digits. With this information available, HATS can generate HTML text boxes which, on the client, restrict key presses based on the field type. For example, if a host screen field is marked as "numeric only", only numerals (and other numeric support characters) will be allowed to be entered into the generated Web page text box. This will reduce the chance of the screen becoming locked or being returned to the user with a message they may have never seen before (since most emulators restrict input).
- Input restrictions (3270/5250):
  - X (alphabetic only, lowercase are converted into uppercase)
  - A (alphanumeric shift, everything permitted), 5250 only
  - S (signed numeric, requires field exit), 5250 only
  - N (numeric shift; 0-9, user must press field+,-,exit), 5250 only
  - Y (numeric only, 0-9, plus, minus, period, comma, space)
  - D (digits only, 0-9, field minus not allowed), 5250 only
- By default in HATS LE 4.0.2, support for all of these field attributes is enabled
  - To disable either the check attribute or input restriction support, add the following settings to your application settings (application.hap) file to the com.ibm.hats.widget.DefaultWidget class settings section:
  - <setting name="enableCheckAttributes" value="false"/>
  - <setting name="enableInputRestrictions" value="false"/>
- Note: To use the "auto enter" feature, the auto advance feature must be enabled; see the section on this change for more information. Also, input restrictions is only support in Internet Explorer 5.0 or higher; this feature is not supported in Netscape.

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HATS LE 4.0.0 - Fix Pack 4.0.1 - Problems Fixed 07/17/03

- The **Function Key** extract did not recognize full-width function key numbers.
- HATS applications did not operate without cookie support. URL rewriting can now be used if cookies are not supported on the browser.
- The recognition of **5250 Subfiles** has been improved (APAR IC36127)
- Customizable settings have been added to the Default Widget and to the Subfile Component to change the criteria needed to match the **Subfile**.
- **Workstation ID** collision avoidance was not working properly for URL overrides (APAR IC36227)
- HATS was unable to recognize screens with **multi-column selection lists** (APAR IC36418)
- **Multi-row subfile** were not rendered correctly (APAR IC36602)
- **'Insert Mode**' is 'on' by default in input fields which is misleading in prefilled fields (APAR IC36637).
- TN3270E Session will not connect.when a legacy TN3270E server does not correctly support RFC 2355 Contention Resolution (APAR IC36294)
- Application hangs when using stress tool (APAR IC36415).
- Japanese Yen Symbol was displaying as a backslash (APAR IC36433)-
- DBCS subfile problem was not being recognized correctly by default rendering (APAR IC36591)
- Arabic numerals shaping was not preserved when coming to new screen (APAR IC36592)

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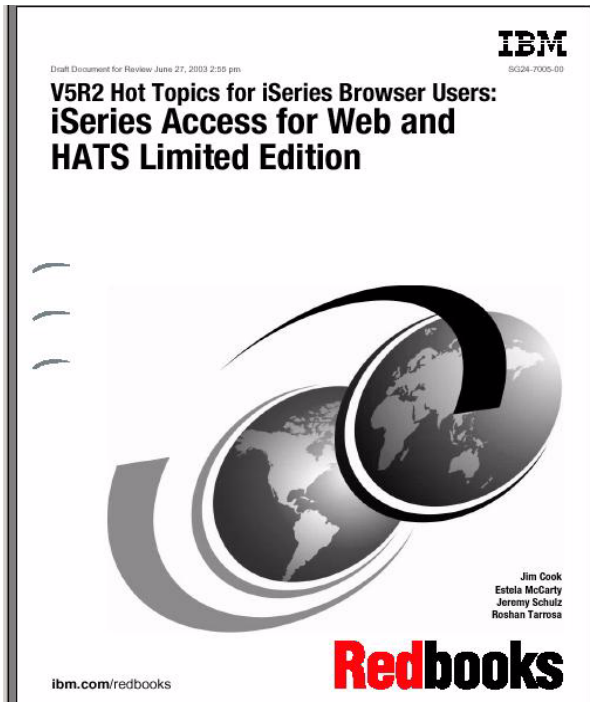
Redbook

New Redbook...
SG24-7005-00

Download it from iSeries Access Web page at
www.ibm.com/eserver/iseries/access



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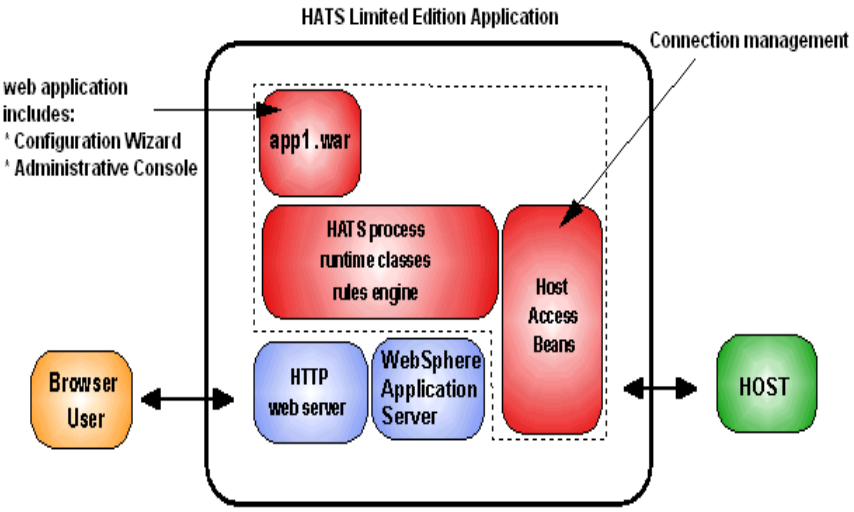
HATS LE - internal view

- **Administrative Console**
- **Configuration Wizard**



HATS LE is a J2EE enterprise application. Once it is installed/configured/started on the iSeries, web browser clients will be able to connect to a url and start using it.

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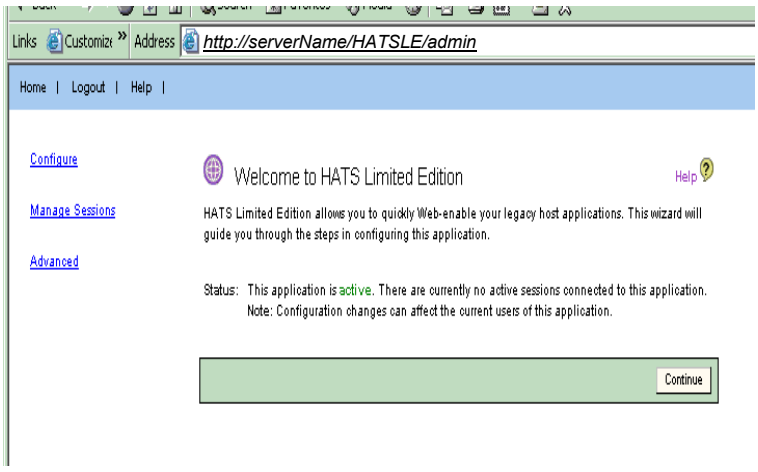
HATS LE - Configuration Wizard

Configuration Wizard

- A web-based tool to enable the administrator to configure HATS LE
- Navigate to URL http://serverName/HATSLE/config
- Requires SECADM authority

Steps that need to be performed are:

- Set up connection settings
- Define default template to be used
- Set up default transformation settings, such as:
  - Converting PF keys into buttons
  - AS/400 subfile support
  - Color remapping
  - Other minor enhancements



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Notes: Installing and using Configuration Wizard

The Configuration Wizard is a web-based wizard used to configure and prepare the HATS LE for use by clients. The administrator can access the Configuration Wizard directly by:

Navigating to the URL http://serverName/HATSLE/config
Clicking the "Configure" option in the Administrative Console, or by
Navigating to the URL http://serverName/HATSLE/entry before the application has been configured.

The first time HATS LE is accessed (or before it has been configured), a log-in page will be displayed. The administrator will need to supply a user name and password before beginning configuration. After the administrator has successfully logged in, a Welcome page will be displayed tol inform the administrator that he/she is about to begin configuring the application.

The Configuration Wizard is the main functional component of HATS LE, and all configuration takes places after the enterprise application has been installed on the application server, but before it can begin servicing clients, it needs to be configured. The main objective of the wizard is to quickly and easily capture the needed information to get the application in service. The wizard is easy to understand and interact with and provides enough flexibility to make it useful.

Steps to be performed by the administrator in the Configuration Wizard:

Configure host connection parameters.
Select a default template, choose whether to show application or host keypads, and select whether to enable browser keyboard support.
Configure default transformation settings.

The Configuration Wizard has navigation buttons (eg, Next, Back, and Finish buttons) along the bottom of each page which allow the administrator to navigate between pages of the wizard. The navigation buttons will appear at the bottom of the wizard as needed. For example, the "Next" button will not appear on the final page of the wizard because there are no further steps to complete.These buttons will be enabled/disabled depending on whether the developer has supplied enough information to continue. Validation of form values supplied by the administrator will be performed only on the server when the page has been submitted (either by clicking "Next", "Back", or "Finish"). The administrator will not be allowed to continue on to the next step until the current step has been successfully validated.

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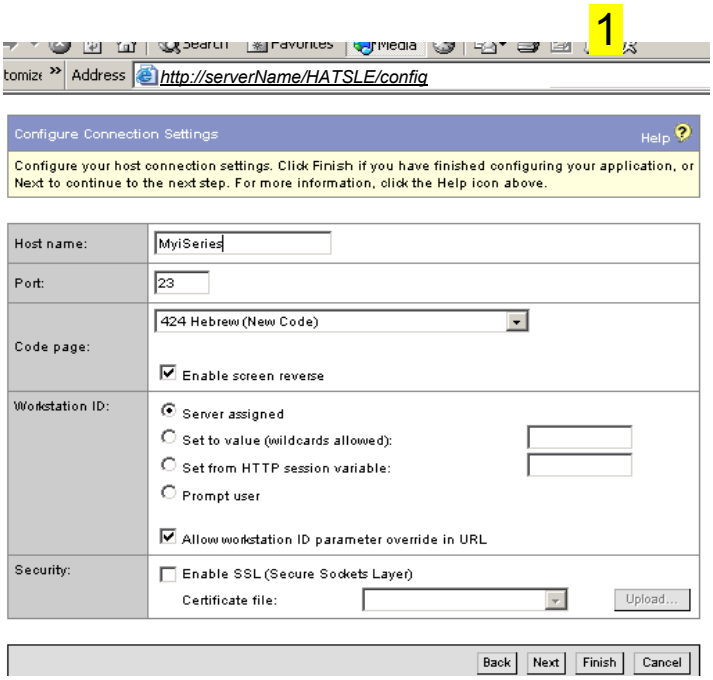
HATS LE - Connection Settings

Connection Settings

- Host name
  - Put the iSeries name in here that you want users to connect to. Doesn't have to be system where WAS or HATS LE is running
- Port
- Code page
- Workstation ID
  - Server assigned (default)
  - Set to a value
  - Set from an HTTP session variable
  - Prompt user
- Security - SSL



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Step 1 : Configuring the Connection Settings

Connection Settings

Use this panel to configure the connection between your HATS LE application, running on WebSphere Application Server, and the host application that it will transform.

Specify this information:

Host name

- Type the name or IP address of the host server, for example, myHost.myCompany.com. The default is the local machine.

Port

- Type the port number assigned to this host connection (between 0 and 65535). The default is 23.

Code page

Select the code page for the set of display characters this host connection uses. The code page you select must match the code page of the host to which you are connecting. The default is the locale of the local machine.

If you select a bidirectional code page, such as Hebrew or Arabic, check Enable screen reverse if you want a Reverse screen button to be included in your template's application keypad. This key enables your users to toggle the screen between right-to-left and left-to-right presentations. This check box is ignored if you do not select a bidirectional code page.

Workstation ID

Choose how the workstationID keyword for sessions connecting to this application will be determined:

- Server assigned: check this button, which is the default, if you want the server to assign a workstation ID.
- Set to value: supply a string from which the workstation ID will be created. Include at least one wildcard character or only the first user will gain access to the application.
- Set from HTTP session variable: if you have stored the result of some previous authentication into a session variable and want to use that value for the workstation ID, click this button and type the name of the variable.
- Prompt user: if you want the user to be prompted for the workstation ID value, click this button. When a user starts your application, a new dialog will appear requesting a workstation ID. The value entered by the user will be stored as a cookie on the client browser and presented as the default on subsequent connections from that browser.
- Allow override in URL: regardless of the method you have selected for setting the workstation ID, you can also enable your users to override the value by adding it to the URL used to access your application.
  - Check this box to enable overriding. The format is: http://<servername>/HATSLE/entry?workstationID=value, where value can contain ten characters including A-Z, 0-9, .(period), _(underscore), @(commercial), #(hash), and $(dollar sign). You must escape # and $ with %23 and %24, respectively, so workstationID=abc#$3 must be coded as workstationID=abc%23%243.

Security

Check this box to implement Secure Socket Layer (SSL) security between your HATS application and the application on the host server. If you have a file from which the SSL certificate should be imported, select the file name from the drop-down list or click Upload to locate the file. If a file is selected in the drop-down list but you do not want to use a certificate file, select the blank entry in the list.

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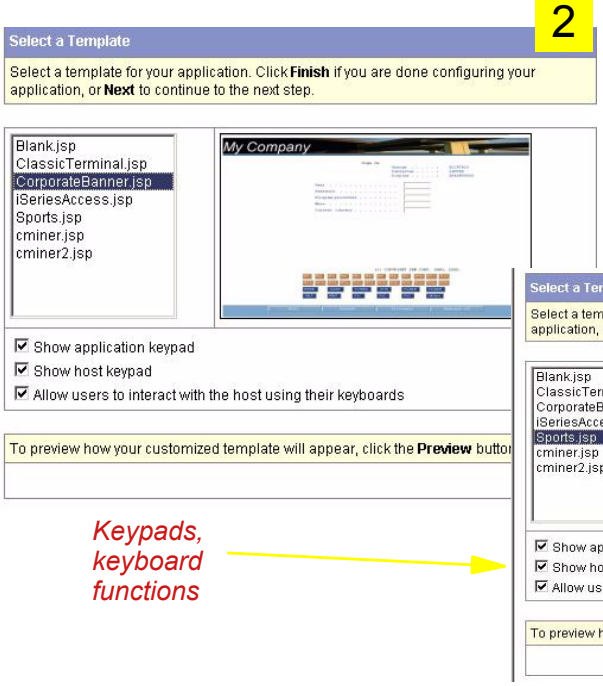
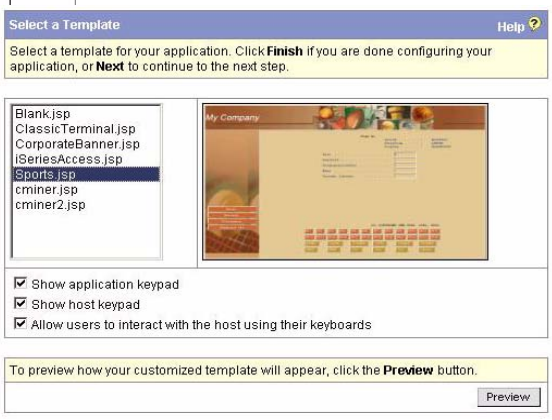
HATS LE - Select a Template

2



Keypads, keyboard functions



Templates included in HATS LE

- Templates have different characteristics
- Can add own templates to list

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Step 2 : Selecting and Configuring the Template

The second step of the Configuration Wizard is to ask the administrator to select a default template, or look, for the application. The following templates will be provided:

- Blank
- Classic Terminal
- Corporate Look
- One that looks similar to iSeries Access for Web

Selecting a template in the list will cause a thumbnail preview of that template to be displayed. The administrator can tailor such things as the company name, company logo, The administrator can also edit the JSP source of the template from the web to provide better consistency with current web applications. The feature will not be made available in the wizard, but only shown in the Administrative Console.

The administrator can also choose whether to show the application keypad and host keypad, and whether to allow end users to use their keyboards (when using a compatible browser) to interact with the host system (ie support for function keys and other designated key combinations). Detailed configuration of the application and host keypads will not be made available in this wizard. By default, the application keypad, host keypad, and keyboard support options will be enabled.

Once the administrator selects a template, it can then be customized (if it has any customizable options) and previewed. Clicking the "Preview" button will show a preview of the template in a new browser with a sample host screen; to quickly see how the template will appear to the end user. Clicking the "Configure..." button will show the "Configure Template"

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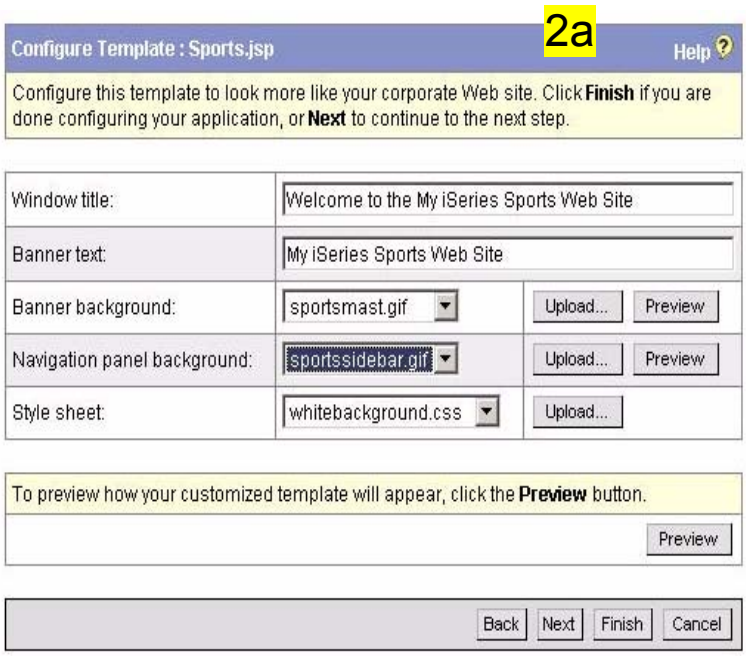
Customizing a Template

Set up your:

- Company name
- Logo
- Corporate Links
- ...



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Previewing my template...

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Step 2a : Customizing a Template

Each template shipped with HATS LE has a set of configurable settings (the size of this set depends on the complexity of the template). This will give the administrator the ability to customize the look of HATS LE. Special JSP tags in the templates will be read at design time and a dynamic page of options will be displayed to the administrator.

An example of this JSP tag is as follows: <HATSLE:Template name="COMPANY_NAME" description="%company_name" type="String" defaultValue="My Company Name" configurable="true" />

The tag consists of these attributes:

- name - the internal name, or key, of the attribute name (non-translated). Required.
- description - the translated string displayed to the administrator during configuration. A description value preceded with a "%" will be looked up in an appropriate translated resource file. Required.
- type - the type of the value. Valid values include String, Image (gif/jpeg supported), Link List, and Stylesheet. Not required. Default value is "String".
- defaultValue - the default value used if no value is specified by the user OR if the "configurable" flag is set to false. Not required. Default value is "".
- configurable - a flag used to determine whether the administrator is given the ability to modify the value of this configurable option in the Configuration Wizard. Not required. Default value is "true".

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HATS LE - define end user 'look and feel'

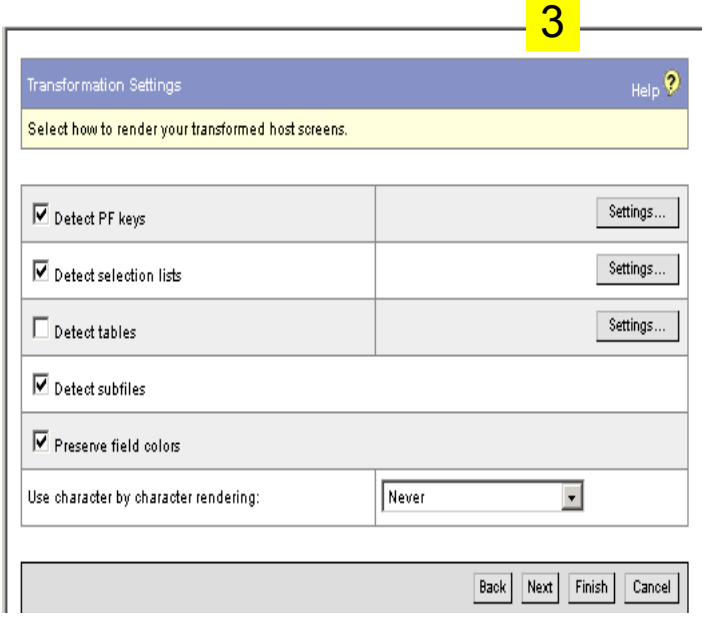
3

Transformation features include detection of:

- Function (PF) keys on the host screen
- Selection lists
- Tables
- Subfile rendering
- Preserves Field colors

Can also configure:

- What determines a PF key on the host screen (ie, delimiters, etc) and how those PF keys will be rendered (either as buttons or links).
- How to display selection lists (ie, button, button table, pulldown list, link, option list)



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Notes: Step 3. Configuring Default Transformations

The third step of the Configuration Wizard is to customize how HATS LE will appear to the end user. The administrator can turn on/off automatic detection of certain host screen components. Default transformation features in a HATS Limited Edition application:

- Automatic selection list rendering
- Automatic detection of PF keys on the host screen
- Automatic subfile rendering
- Automatic table detection

Any or all of these features can be turned off by the administrator. The administrator can also configure different properties for each feature. For example, ability to configure what determines a PF key on the host screen (ie, delimiters, etc) and also how those PF keys will be rendered (either as buttons or links).

HATS Limited Edition will take advantage of the default screen transformation technology already available in HATS. The set of options for default transformation in HATS LE will be smaller than the set currently in HATS V4. The set of options is smaller because HATS Limited Edition is specifically targeting 5250 host applications which are generally more consistent in nature than mainframe hosts.

Connecting to the Application

The final interactive step of the Configuration Wizard is to allow the administrator to view the settings -- this includes host connection parameters, default template, customization settings, etc. The administrator can then accept these settings by clicking the Finish button. This will save the changes to the appropriate files. The administrator then chooses whether to activate HATS LE. It cannot be accessed by client browsers until it is actived. This option will be turned on by default. Once the administrator clicks Finish, HATS LE will connect to the host and start; and the administrator will be presented with the signon page (presumably) of the host system.

Once the administrator has configured HATS LE, an end user can connect to the application by navigating to the URL, http://serverName/HATSLE/entry or simply http://serverName/HATSLE.

If HATS LE has been activated by the administrator, the user will see the first host screen on the configured host (assuming the connection parameters supplied by the developer were correct).

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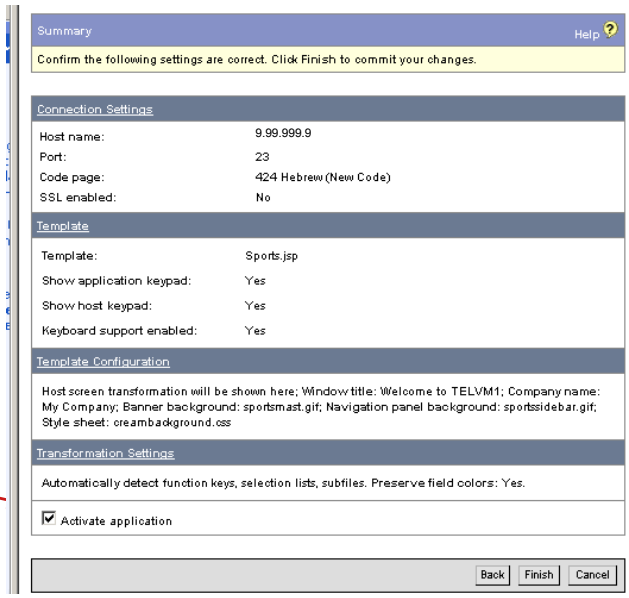
HATS LE - Configuration Summary

Review the configuration settings you have selected

If you have the 'Activate Application' box checked, then as soon as you press the 'Finish' button, users will be able to start accessing your iSeries through HATS LE



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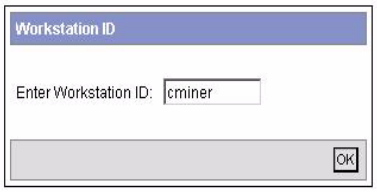
Users can now access iSeries through HATS LE



- End user connects to HATS LE by navigating to a URL:
- *http://serverName/HATSLE/entry*
  - or simply
- *http://serverName/HATSLE*

- In my sample Configuration I indicated users had to enter a Workstation ID before signing onto OS/400
- Next screen is then OS/400 Sign On screen

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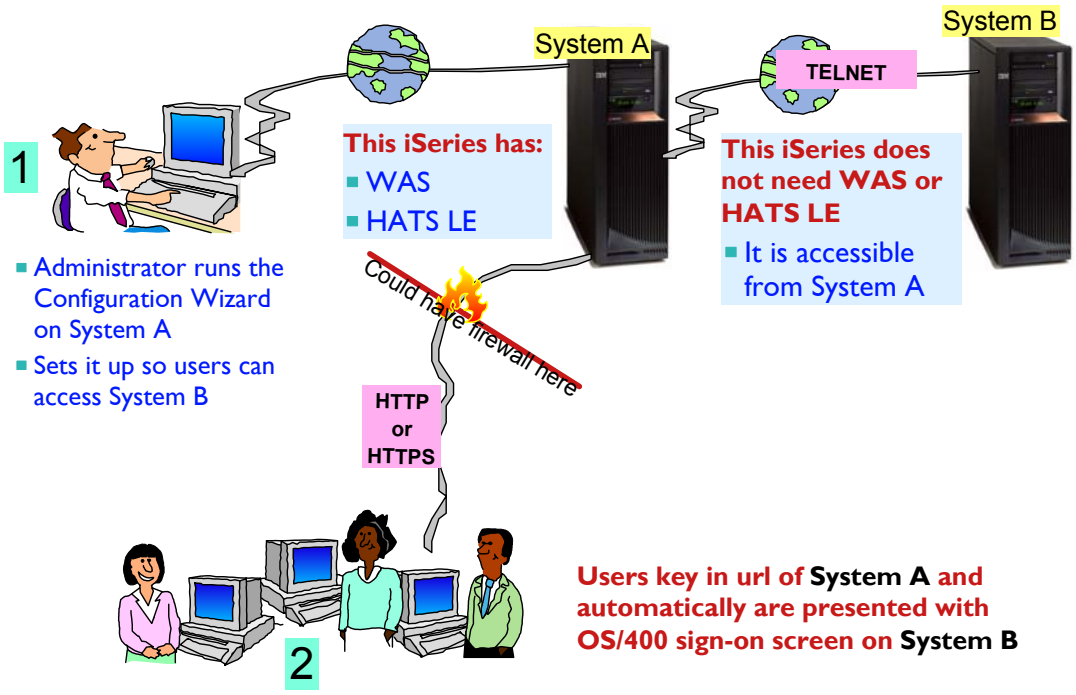
Can set up to connect to any iSeries...



Users key in url of System A and automatically are presented with OS/400 sign-on screen on System B

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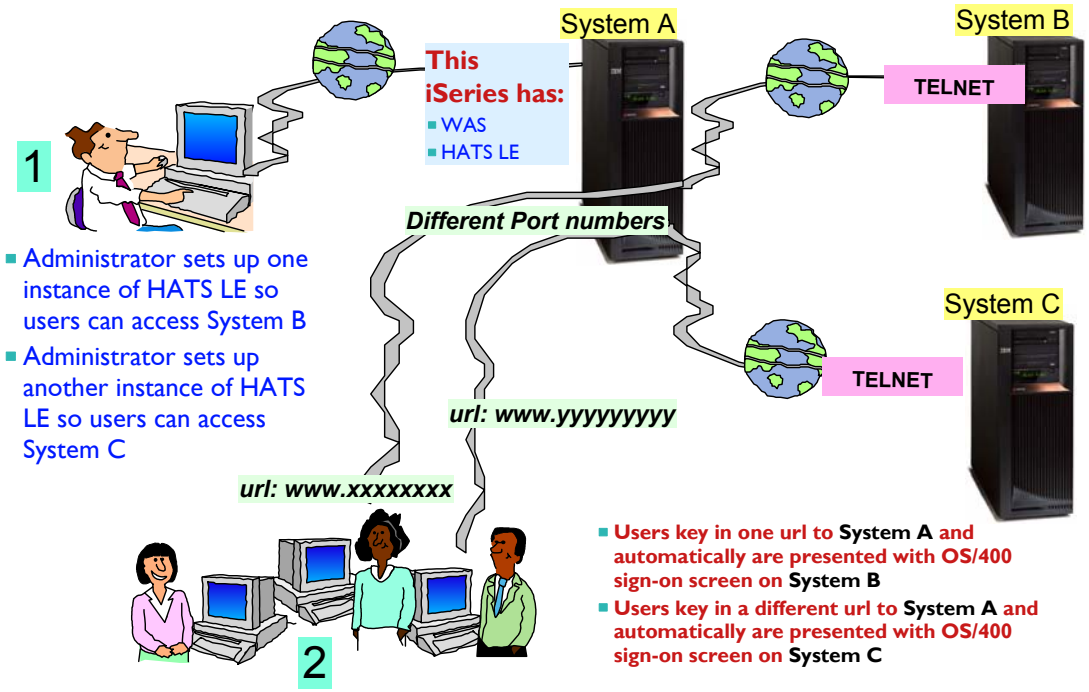
For users to connect to multiple iSeries.....



- Administrator sets up one instance of HATS LE so users can access System B
- Administrator sets up another instance of HATS LE so users can access System C

- **Users key in one url to System A and automatically are presented with OS/400 sign-on screen on System B**
- **Users key in a different url to System A and automatically are presented with OS/400 sign-on screen on System C**

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Notes: Developing multiple instances of HATS LE

User-level Customization

The HATS LE Configuration Wizard has no options fo assign different configuration settings for some users versus other users.

To handle this requirement, considering doing the following:

- Create multiple instances of WAS on the iSeries server, assigning a different HTTP port number for each instance.
- Deploy HATS LE to each of those instances. Each deployed version can have a set of customization different from the others.
- Configure each deployment to connect to a different iSeries server

Single-Deploy-Multiple-Hosts Connectivity

Although networking with other iSeries servers can be set up from the iSeries where the HATS LE application is installed, the configuration wizard does not provide options to have different configuration settings for these different iSeries servers. It also has no options for customers to assign different configuration settings for some users versus other users.

To handle these requirements, there are two alternatives that can be done:

- Create multiple instances of WAS on the iSeries server, assigning a different HTTP port number for each instance.
  - Deploy HATS LE to each of those instances. Each deployed version has its own set of customization.
  - Configure each deployment to connect to a different iSeries server.
- Access the **application.hap** file of HATS LE (this is accessed via the XML Edit function).
  - Locate the code area bounded by the tags: <classSettings> and </classSettings>
  - Within this code area, insert the following snippet to set the override value:

    <class name="com.ibm.hats..SessionOverride">
    <setting name="host" value="true"/>
    </class>
  - The host setting effectively makes the host name connect to a variable and enables passing in the name of the sever at the time the URL is entered. Thus, on the browser, the URL must be entered with the host entry as a parameter. The URL would look like this:

    http://AS27/HATSLE/entry?host=AS02
  - where

    AS27 is the iSeries server where HATS LE is installed
    AS02 is the iSeries server to connect to

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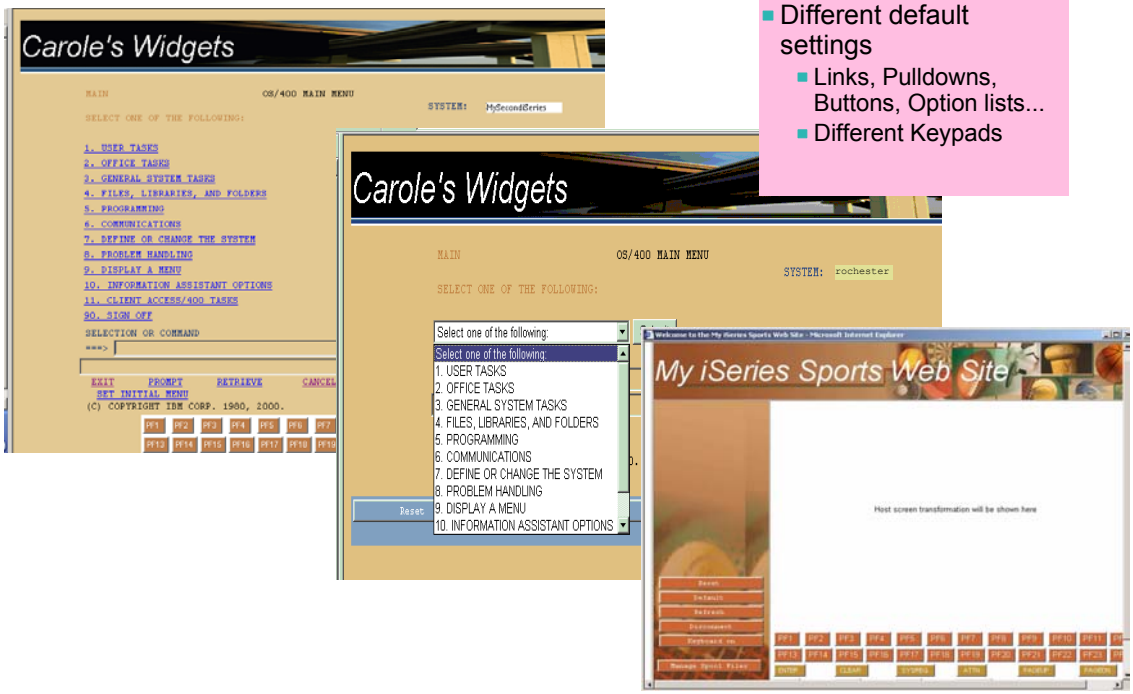
Try different settings...



- Different default settings
  - Links, Pulldowns, Buttons, Option lists...
  - Different Keypads

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Setting up Keypads

Show application keypad

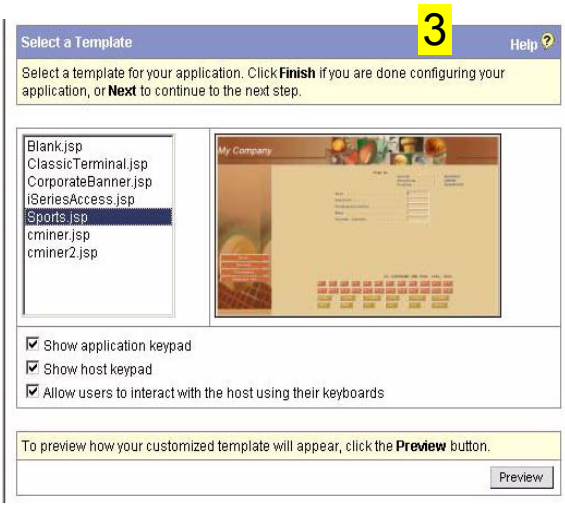
- Check this box to show the application keypad, with keys (such as Refresh, Reset, and Disconnect) that represent application-level functions. These keys control functions within the HATS LE application. Depending on the template, they might appear in the navigation area of your template or at the bottom of the transformed host screen.

Show host keypad

- Check this box to show the host keypad at the bottom of the transformed host screen. The host keypad represents keys that control functions on the host, such as F1, F2, and Clear.

Allow users to interact with the host using their keyboards

- Check this box if you want your users to be able to use the function keys on their keyboards to interact with the host application.



You can experiment with these settings to see what effect they have on your HATS LE application. Check each box in turn and click Preview to see how the template appears.

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Using the keyboard and keypads

Users frequently interact with host applications using special keys on the physical keyboard, such as F1, Attn, and Clear. There are two different ways in which the end users of your HATS projects can send keystrokes to the host:

- By pressing keys on the physical keyboard. If you want to enable your users to use these function keys on the keyboard, check Allow users to interact with the host using function keys on their keyboards. The keys will be passed directly to the host application. This function is not supported with Netscape Version 4.
- By using a keypad—a graphical table of HTML buttons that represent keys on the physical keyboard. The end user clicks on the desired key in the keypad to send that host key to the host.

There are two keypads that you can add to your template:

- The host keypad, with keys (such as F1, F2, and Clear) that represent host keys. These keys control functions on the host. If any of your users will use Netscape Version 4, you must include the host keypad in your application.
- The application keypad, with keys that represent application-level functions. These keys control functions within the HATS LE application. The application keypad keys include:
  - Reset Clears all the fields on the browser page of any entries made by the end user.
  - Reverse Screen - Toggles the screen image from a left-to-right image to a right-to-left image or vice-versa, if the application is running on a host with an Arabic or Hebrew code page. If an Arabic or Hebrew code page is not selected in the project connection settings, this button does not appear on the application keypad.
  - Refresh - Refreshes the current browser screen and performs the current transformation again.
  - Default - Turns off all configured settings and refreshes the current screen using the default settings. This can be useful if a user has trouble viewing a screen.
  - Disconnect - Disconnects from the host session. If this key is clicked, a link appears to let the user reconnect to the host.
  - Keyboard On/Of - Toggles support for using the physical keys on the host keyboard. If keyboard support is not enabled for the application, this button does not appear on the application keypad. Note: The text of the button seen by the end user depends on the state of the keyboard. The button will read “Keyboard off” when keys are being sent to the host, and “Keyboard on” when keys are being sent to the browser. By editing the application file, you can control which of these keys appear on the application keypad.

Advanced template configuration

You can perform more advanced configuration by editing the source file for your template. To edit this file, start the HATS LE Administrative Console and click Advanced. See Chapter 4, “Administering Your HATS LE Application”, on page 11 for information about starting the HATS LE Administrative Console.

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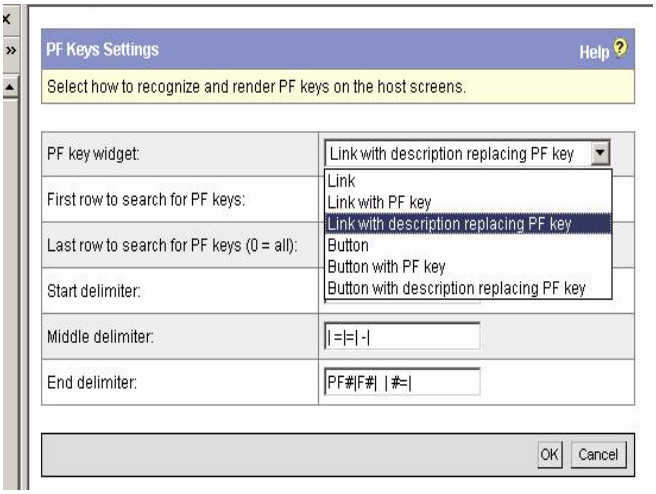
Special PF Key Settings

Use this panel to configure the way your HATS LE application recognizes and presents PF keys from the host screen.

Specify this information:

- PF key widget
- First row to search for PF keys
- Last row to search for PF keys
- Start delimiter
- Middle delimiter
- End delimiter



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Tip: Modify the appearance of the Host Keypads

I want to modify the appearance of the host keypads...

For example, I want to display the host keypads, but I do not want all the function keys (F1-F24) displayed.

How do I do that?

- You can modify their Application Settings file and make the following changes to the:
  - "com.ibm.hats.common.HostKeypadTag" settings section
  - "showFXX=false" where XX is a number form 1-24.
- Access this from the HATS Administration Console, click on Advanced, then click "Edit" (for editing the application settings XML file).
  - This section is under the <classSettings> section under <class name="com.ibm.hats.common.HostKeypadTag">
- This will hide that particular button (and disable keyboard support) for each particular function key.

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Other Administrator functions....

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Notes: Administrative Console

This is the default page shown for Administrative Console. The administrator using either the Administrative Console or the Configuration Wizard will be prompted to enter a user name and password, and must have "SECADM" authority associated with his/her account.

The **overview page** is the first page displayed to the administrator when they enter the console. This page will:

- Show the status of the application (inactive/active)
- Allow the administrator to change the status of the application
- Show when the application was started
- Show the current number of active connections
- Show the peak number of active connections (and the date/time when that occurred)
- Show host connection settings (IP address, port, etc)

Configure - the Configure section will allow the administrator to configure the application; (using the Configuration Wizard). the Configuration Wizard will be launched in the right-hand side of the Administrative Console window.

Manage Connections - the Manage Connections section will allow the administrator to manage all active connections to the application.
This page will:

- Show all active connections (in the form of a sortable table)
- Show when each connection started, how long since the connection was used, the IP address of the client, and the internal name of the session, the name/version of the browser the client has connected with, and the workstation ID of the connection.
- Allow the administrator to view the current host screen of the user
- Allow the administrator to terminate (stop) the session for one or more active connections

Advanced - the Advanced section will allow the administrator to configure more advanced settings of the application. This includes:

- Editing the application.hap (for tweaking purposes)
- Editing a selected template
- Exporting the application (for importing into HATS)

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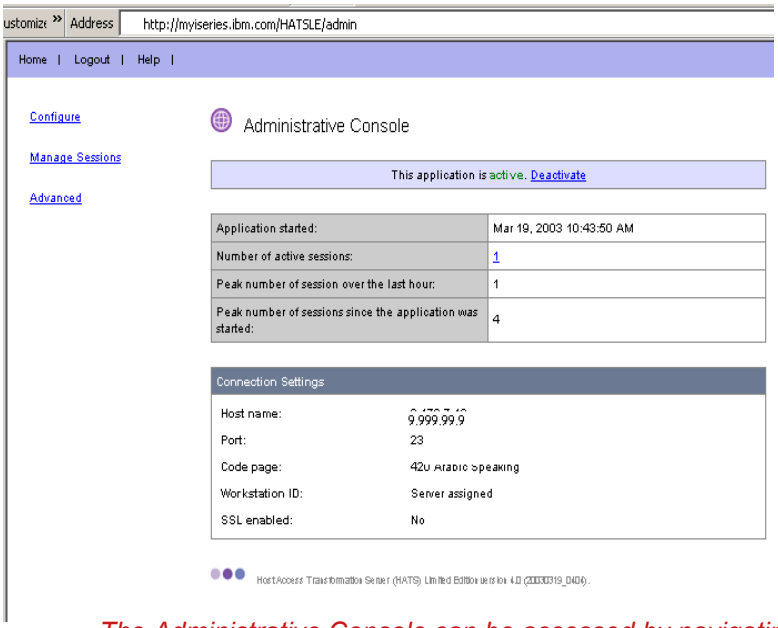
HATS LE - Administrative Console



A web-based tool to:

- Manage active connections
- Tweak configuration changes
- Activate/deactivate the application
- Launch the Configuration Wizard

Different than the WAS administrative console

Requires SECADM authority

The Administrative Console can be accessed by navigating to http://serverName/HATSLE/admin

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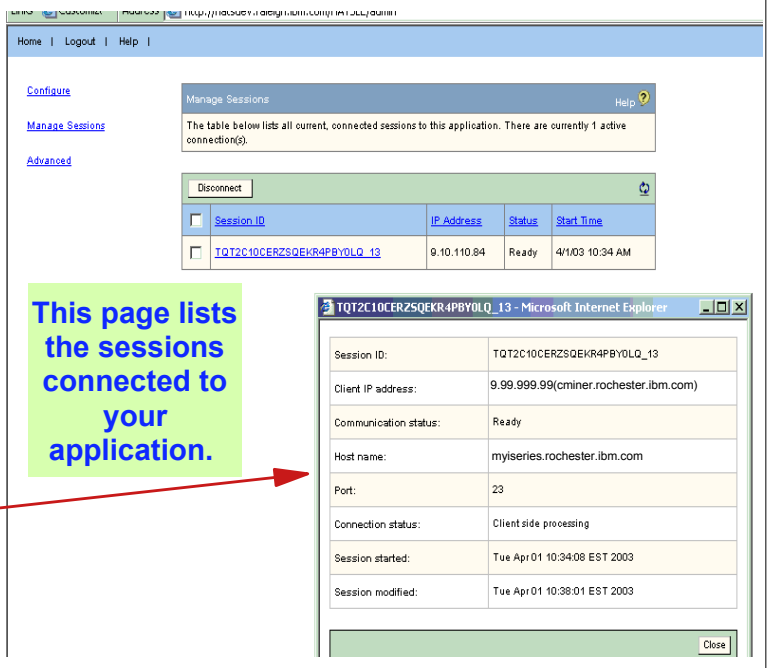
Manage Sessions

From this page you can:

- Review the list of sessions connected to your application
  - Click the refresh icon to refresh the list.
- Sort the list by any column by clicking the column heading
  - Click the same heading again to sort in the opposite direction. The arrow icon identifies the column and direction used for sorting.
- Click a session ID to view detailed information about the session.
- Disconnect a session
  - Check the box on the line representing that session and click Disconnect
  - You can select all the sessions by checking the box in the title bar



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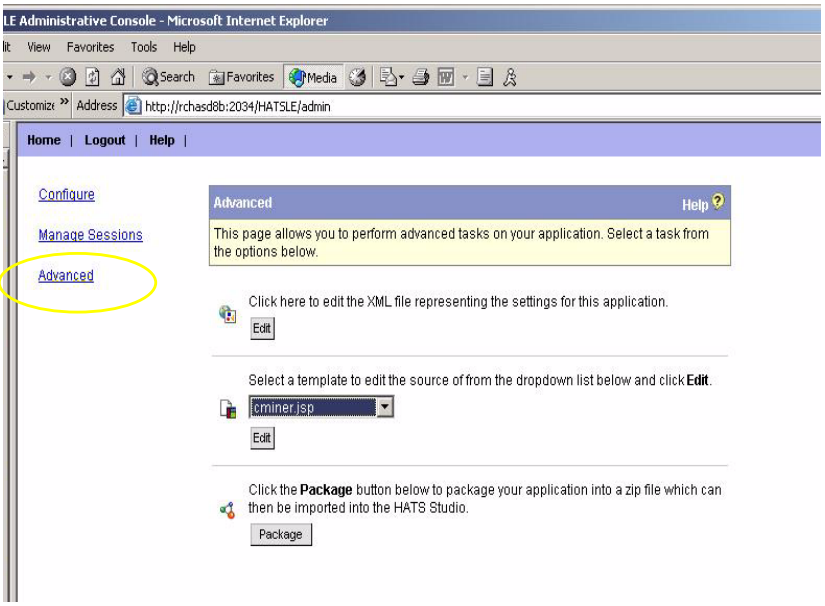
Administration - Advanced Functions

- **Modify the XML file of the HATS LE application**
- **Create your own template**
- **Export your HATS LE settings into HATS**



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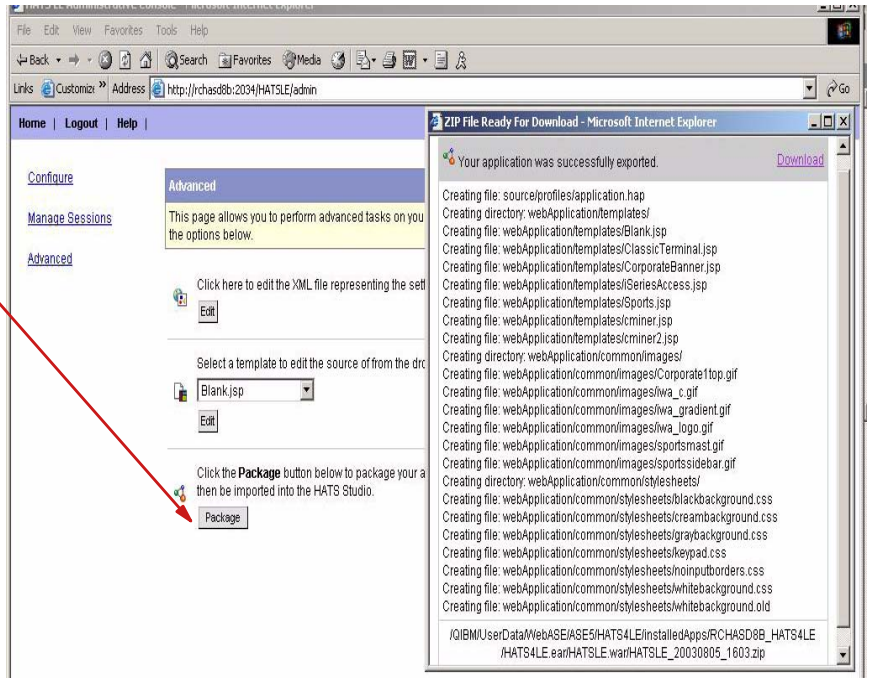
Package function in Advanced Administration

Save your current version of HATS LE

- When you click on the button 'Package', it automatically stores your version of HATS LE in the QIBM directory
- Now you are ready to install a Fix Pack, and still have a working backup.



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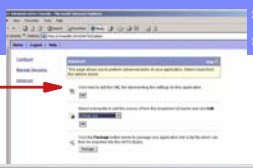
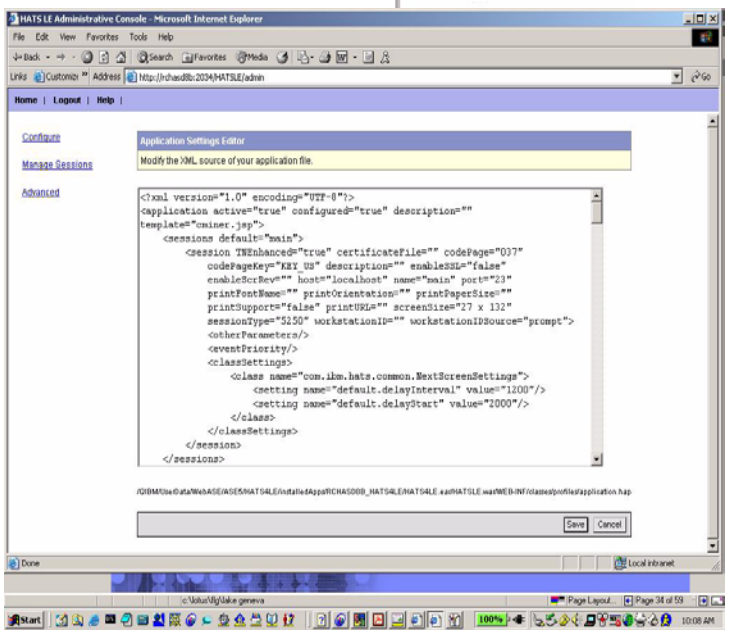
Edit HATS LE - XML File



HATS LE configuration settings are stored in the XML file

- This file can be changed to introduce further customization options, ie:
  - User-level customization
  - Single - deployment - multiple - host customization



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Advanced - Modifying your application file

The application file contains XML tags that define the settings you select when you configure your HATS LE application.

You can perform advanced configuration by editing the application file. To edit the file, start the HATS LE Administrative Console and click Advanced. The tags used in the application file are:.

- <application> tag - The <application> tag is the enclosing tag for the application. The attributes of the <application> tag are:
  - description - Contains an optional description for the application
  - template - Specifies the name of the template for the application, which you select when you configure the application.
- <sessions> tag - The <sessions> tag is the enclosing tag for the session characteristics. The attributes of the <sessions> tag are:
  - default - Specifies the session configured for the application. This value should always be main, and main is the default.
- <session> tag - The <session> tag specifies the session characteristics for the application. The attributes of the <session> tag are:
  - codePage - Specifies the numeric code page number for the code page used in the application. The default value is 037. You select the codePage value when you configure the application. A code page number might be used for more than one location or usage. See the description of the codePageKey attribute for the code page numbers.
- codePageKey - Specifies the usage key that corresponds to the numeric codepage. The default value is KEY_US.
- <other parameters> tag - specifies additional 5250 session parameters
- <classSettings> tag - is the enclosing tag for the Java classes you included with the application
- <class> tag - specifies the Java classes that can be included with the application
- <settings> tag - specifies the methods included in the Java tag
- <textReplacement> tag - is the enclosing tag for any test replacement values you defined in the application
- <replace> tag - specifies the replacement values in the application

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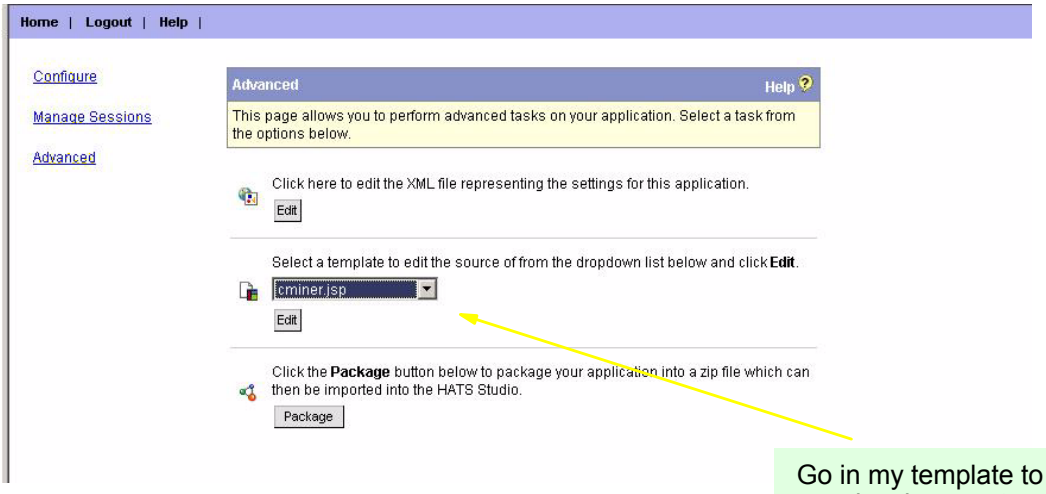
Build / Edit your own template



Go in my template to make changes to screen look-and-feel

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Tips

For more tips and information see:

- **Go to iSeries Access Family - HATS LE web page at:**
- **www.ibm.com/eserver/iseries/access/hatsle**
- **Click on 'WebSphere Host Access Transformation Server Limited Edition Technotes**

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Tip: Add a personalized template to list of templates

I would like to copy one of the HATS LE templates and modify it. Then add it back into list of templates. How do I do that?

- Go to the iSeries server where your HATS LE application is installed and copy a template to your workstation
  - Located in HATS4LE.ear\HATSLE.war\templates) JSP file
- Modify the template using your favorite HTML/JSP editor
- Save the template with a different name, and then copy it back to the same location on your iSeries server.
- Once the Configuration Wizard is restarted, you will see the template appear in the list with the shipped templates.

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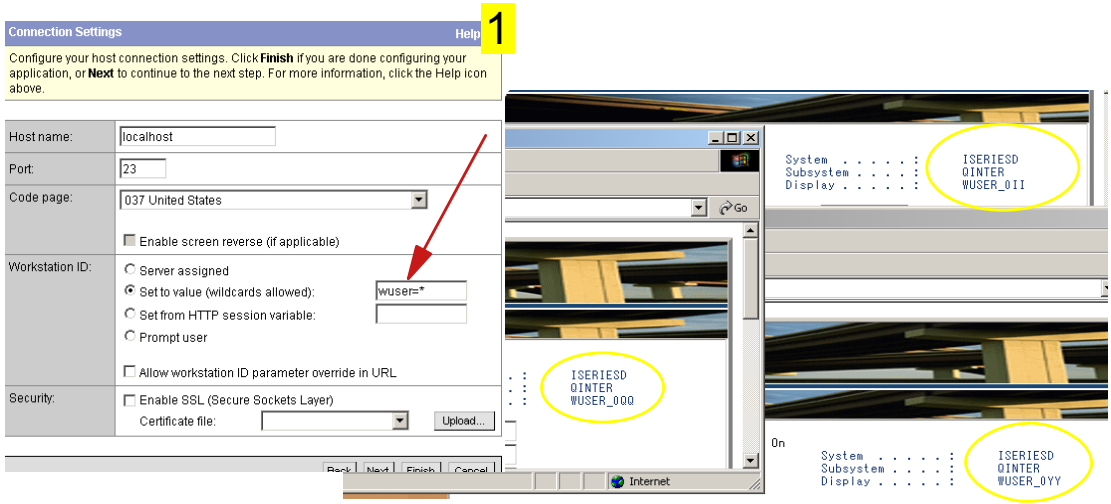
Tip: How do I set workstation id to a default?

- How to guarantee unique workstation IDs
  - If you choose to have HATS LE assign workstation ID values based on a string you supply, be sure to include an equal sign (=) before the wild-card character. For example, if you specify ABC* (without an equal sign) as the string from which workstation IDs will be created, HATS LE cannot always assign unique workstation IDs.
  - If you specify ABC=*, HATS LE will assign unique workstation IDs.



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Differences
iSeries Access for Web
vs
HATS LE

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

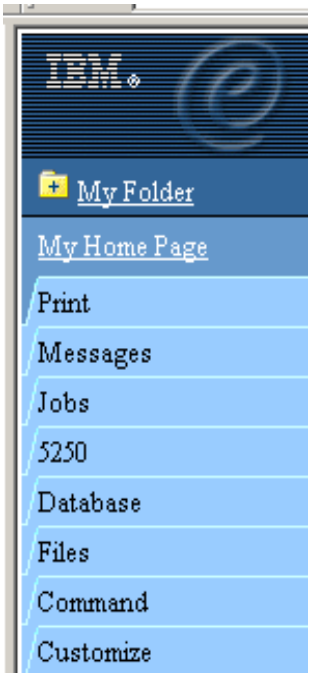
My Personal Folder

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 functionsu by user or group of users:
  - Can customize front page
  - Can limit what tasks can be performed

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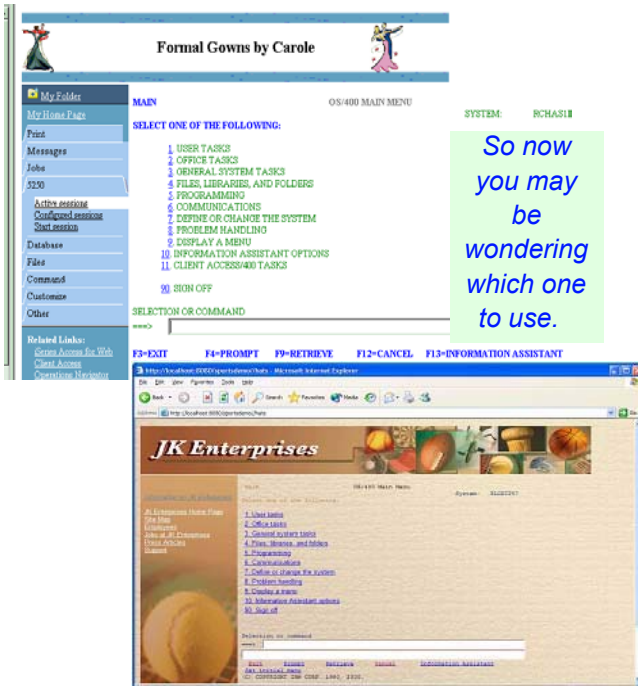
We will look only at differences between the 5250 interface here...

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.

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Subfile handling by HATS LE...

- **HATS LE has special default code to handle 'subfiles'.**
  - Ran command 'STRQM'
  - Selected 'Work with Query Manager Tables'

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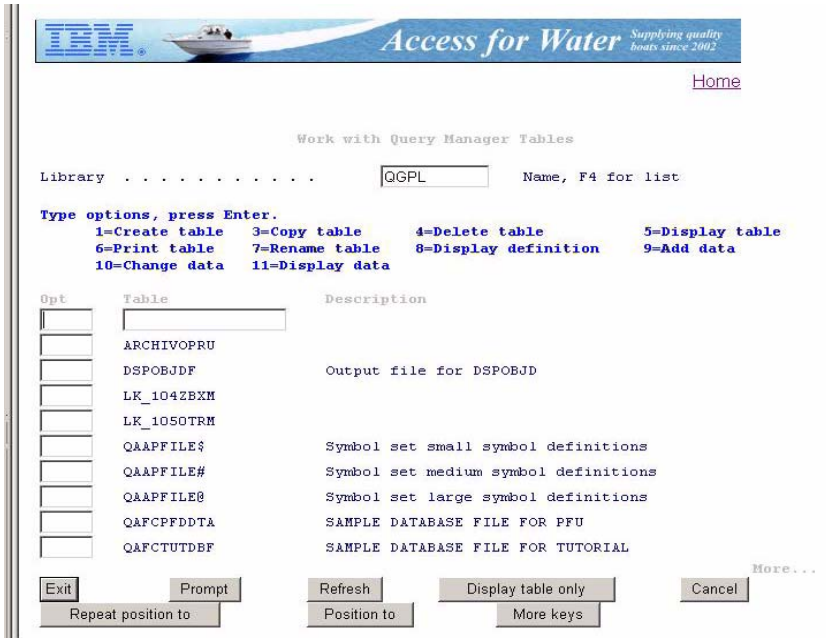
Access for Web - same OS/400 screen

- **Same OS/400 command screen viewed by 5250 emulator in Access for Web**



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Differences - iSeries Access for Web vs HATS LE

Capability	Access for Web	HATS LE
5250 emulation	Yes	Yes
• Can enable 'More...' on a button, cursor positioning help (ie, will perform function that pressing F1, F9, etc would do)	Yes	No
• Can specify to have drop down lists	No	Yes
• Can detect selection lists and tables and provide an enhanced GUI look	No	Yes
• Provides special handling for Subfiles	No	Yes
• Can start multiple 5250 sessions to multiple iSeries servers from single browser connection	Yes	No
• Macro support to eliminate entering repetitive commands or even bypass the second sign-on screen.	Yes	No
• One centrally administrated *user interface/keyboard* applies to all 5250 users	No (1)	Yes
Keyboard support		
• Internet Explorer - can press Function keys, page up/down, etc	Yes	Yes
• Netscape - can press Function keys, page up/down, etc	No	Yes
GUI access to iSeries resources		
• Database	Yes	No (2)
• Printers, Printer Output	Yes	No (2)
• IFS, NetServer	Yes	No (2)
Web page customization		
• Templates included for setting up GUI (ie, company logos, etc)	No	Yes
• Can build different front pages ('window) for different users	Yes	No
Web application servers supported:		
• WAS - all V4 and V5 versions	Yes	Yes
• ASF Tomcat	Yes	No

(1) The next release of Access for Web (now in beta) will support centralize 5250 customization
(2) Can include link to Access for Web to perform these functions from HATS LE session

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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.

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IBM eServer iSeries

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 appliation.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, such as working with spool files, printers, database, running commands, etc, run batch.

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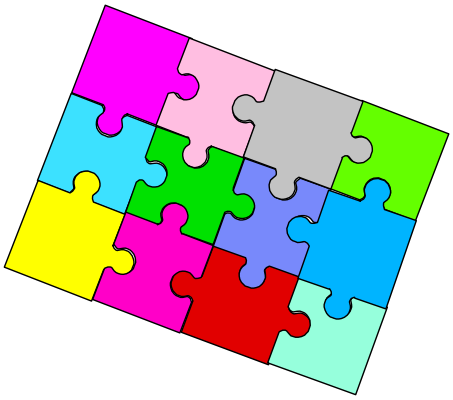
Combine the use of products...

Link to iSeries Access for Web from HATS LE....



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From my HATS LE screen, work with iSeries Printer Output

Within HATS LE, could include a link to Access for Web...

Has a link to iSeries Access for Web Printer Output

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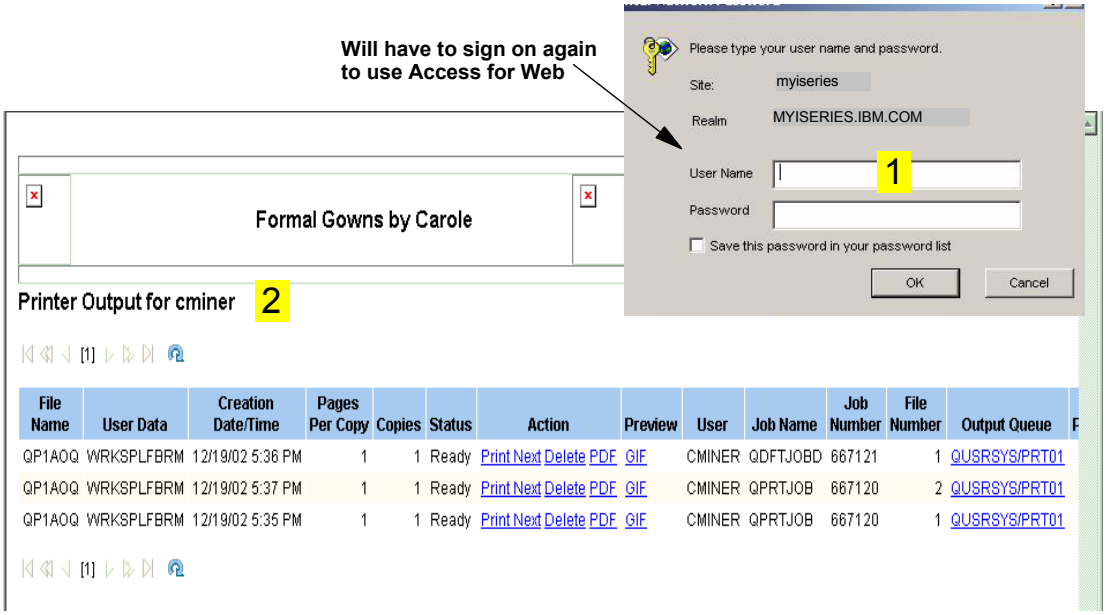
iSeries Access for Web - Printer Output screen

Will have to sign on again to use Access for Web



- **CMINER user profile customized in Access for Web to not show 'Navigation Bar' (ie, access to other functions.**
- **Once user is finished here, they press browser back button to return to HATS LE screen**

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Notes: Add Access for Web PDF link to HATS LE

Edit your template to include linking to iSeries Access for Web Printer Output so users can see/print their jobs.. The easiest way to modify your template is to open the HATS LE Admin Console, click "Advanced", select your template and click "Edit".

Note the circled additions put in the template...

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01
Transitional//EN">
<HTML>
<%@ page import="java.util.*, com.ibm.hats.common.*" %>
<%@ page language="java" contentType="text/html;
charset=UTF-8"%>
<%@ taglib uri="/WEB-INF/classes/tld/hats.tld" prefix="HATS"
%>

<HEAD>
<title><HATS:TemplateSetting name="PAGE_TITLE"
caption="%PAGE_TITLE_FIELD"
defaultValue="%WELCOME_TO_MY_SITE_MSG" type="string"
helpID="" configurable="true" priority="1" percentFill="100"
/></title>
<HATS:Util type="baseHref" />
<script type="text/javascript" language="javascript">
function goToURL(url) {
  document.location.href = url;
}
</script>
<META name="GENERATOR" content="IBM WebSphere
Studio">Add the following lines:
```

Further down in the template note the circled additions added:

```
<CENTER>
        <TABLE height="100%" cellpadding="3" cellspacing="3"
border="0" width="100%">
                <TBODY>
                        <TR>
                <TD nowrap width="145">
                                <BR>
                                <BR>
                                <BR>
                                <BR>
                                <BR>
                                <BR>
                                <BR>
                                <BR>
                                <BR>
                                <BR>
                                <BR>
                                <BR>
                                <BR>
                                <BR>
                                <BR>
                                <BR>
                                <BR>

<HATS:ApplicationKeypad/>
<input type="button" class="ApplicationButton" value="Manage Spool
Files" onClick="goToURL('http://myiseries/webaccess/iWASpool')">
                                </TD>
```

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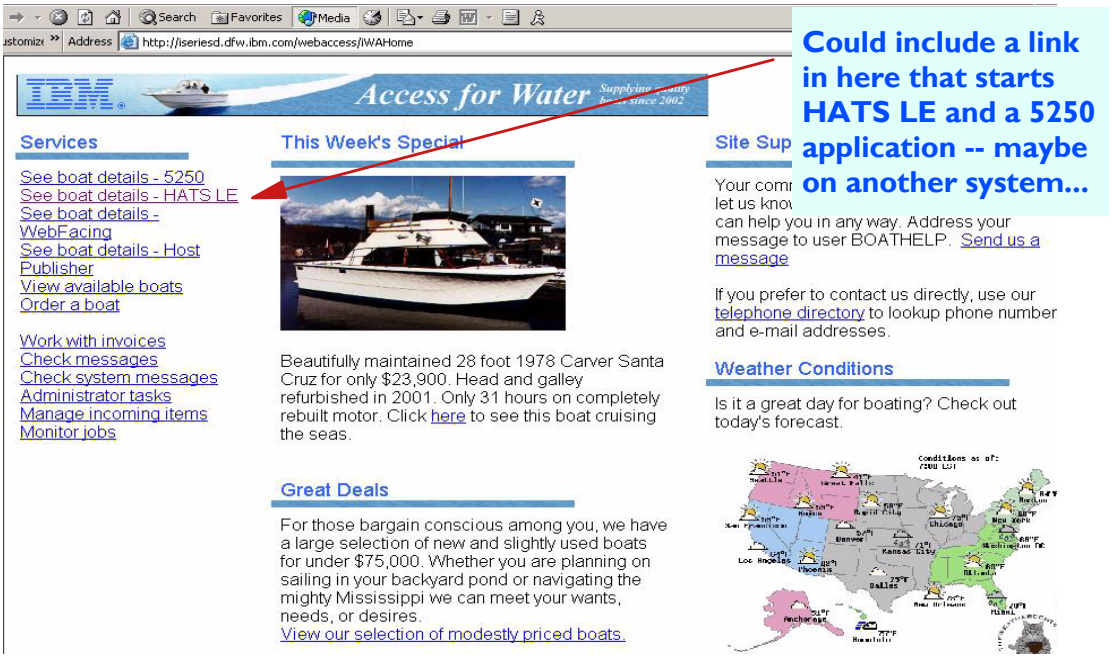
iSeries Access for Web - sample 'customized' front page



Could include a link in here that starts HATS LE and a 5250 application -- maybe on another system...

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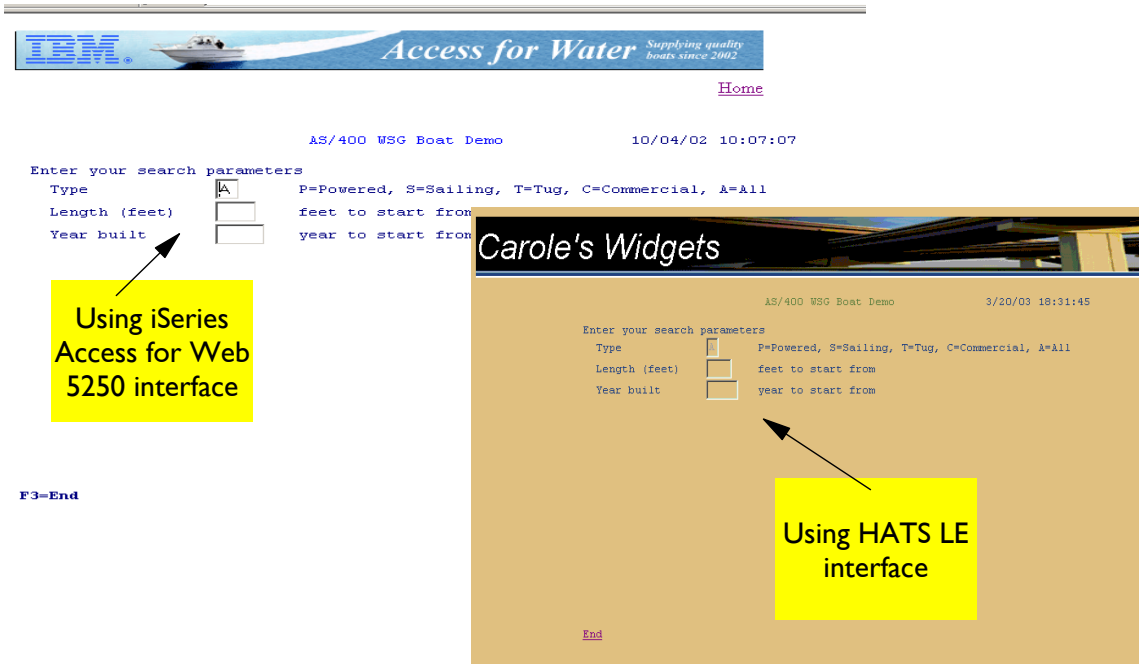
RPG Application - AS/400 WSG BOAT DEMO



Using iSeries Access for Web 5250 interface

Using HATS LE interface

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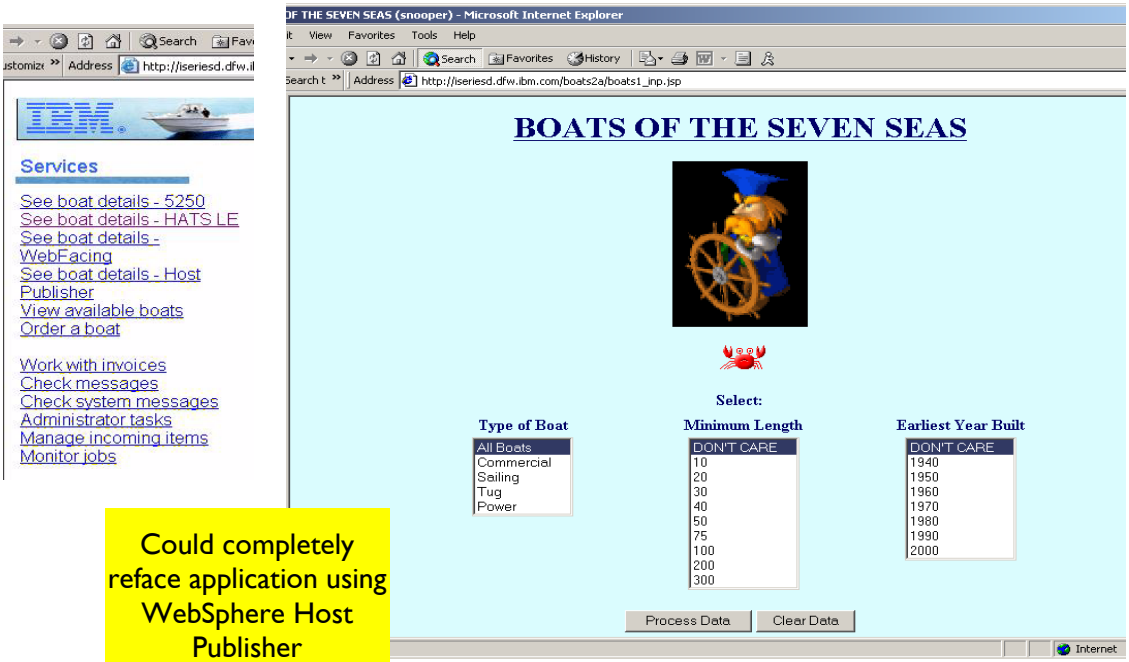
Boats applications - Host Publisher



Could completely reface application using WebSphere Host Publisher

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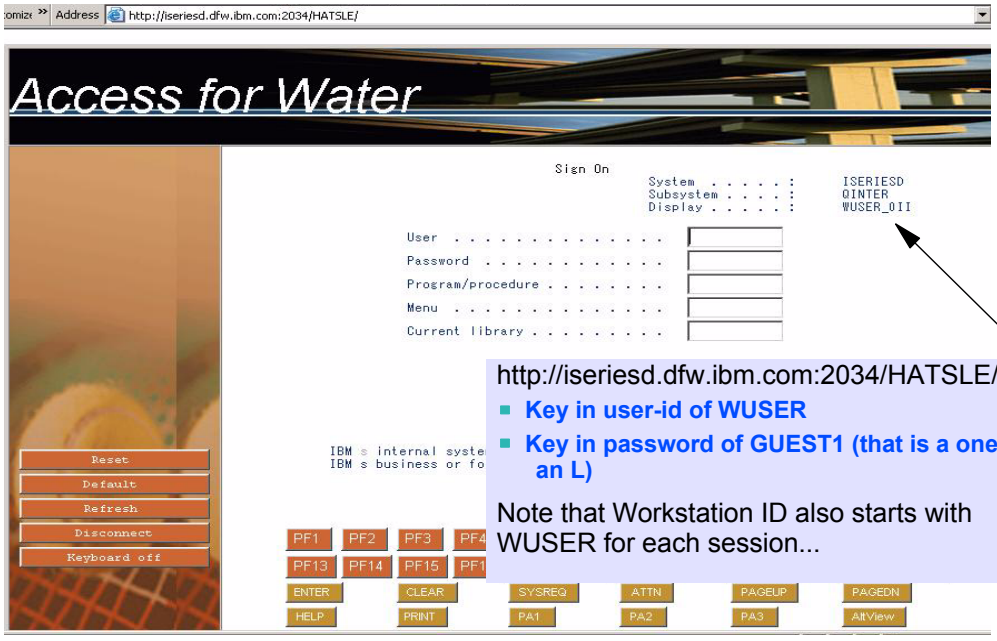
Demo web site...connect to iSeries via HATS LE tonight!



http://iseriesd.dfw.ibm.com:2034/HATSLE/

- **Key in user-id of WUSER**
- **Key in password of GUEST1 (that is a one, not an L)**

Note that Workstation ID also starts with WUSER for each session...

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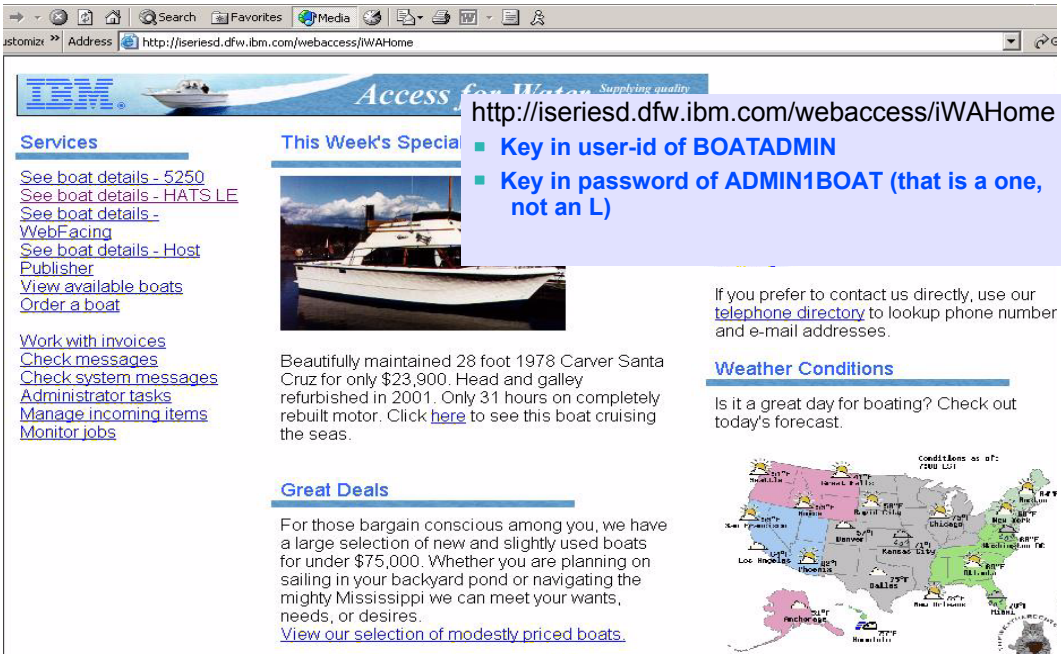
Demo web site...use HATS LE from Access for Web



http://iseriesd.dfw.ibm.com/webaccess/iWAHome

- **Key in user-id of BOATADMIN**
- **Key in password of ADMIN1BOAT (that is a one, not an L)**

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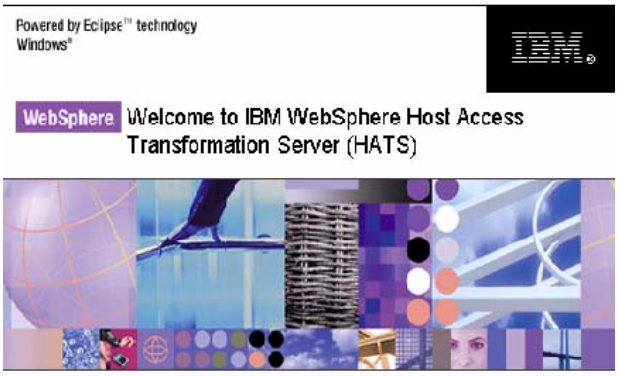
Differences
HATS
vs
HATS LE



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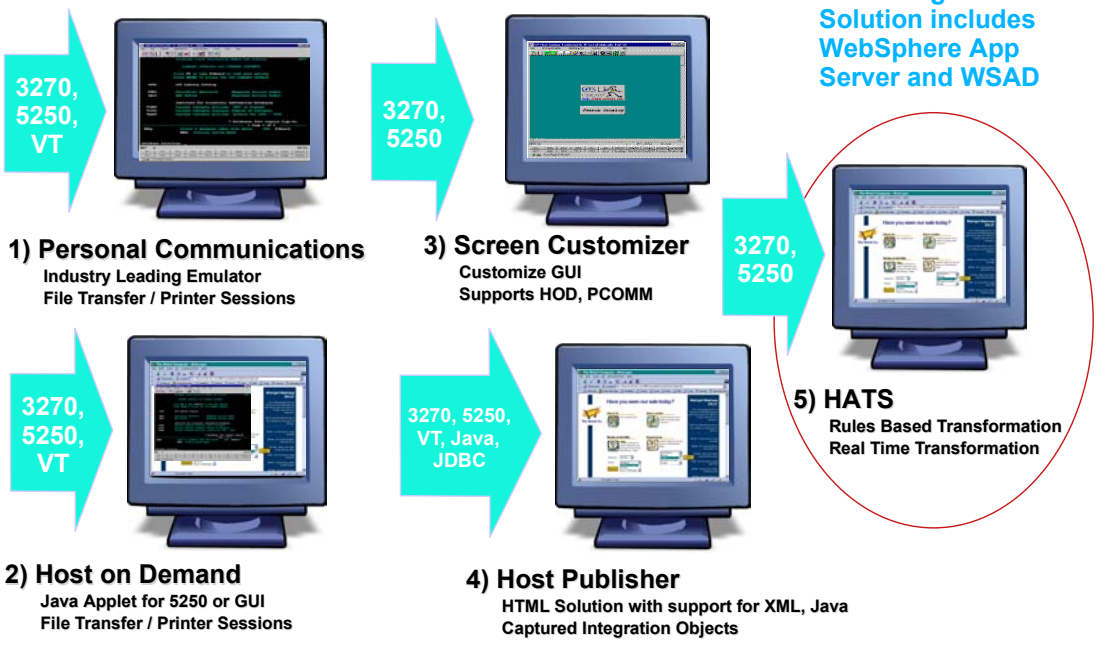
WebSphere Host Integration Solution



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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

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Capabilities ...

Designer is plug-in to WebSphere Studio Development Tools

Eliminates need to customize every screen

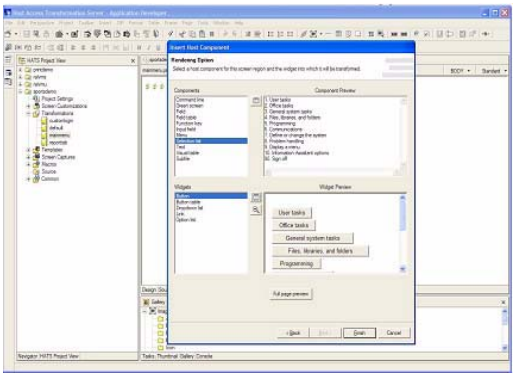
- Rules-based data stream translator

Host Publisher

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 LE



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

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Notes: 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 rrequired 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.

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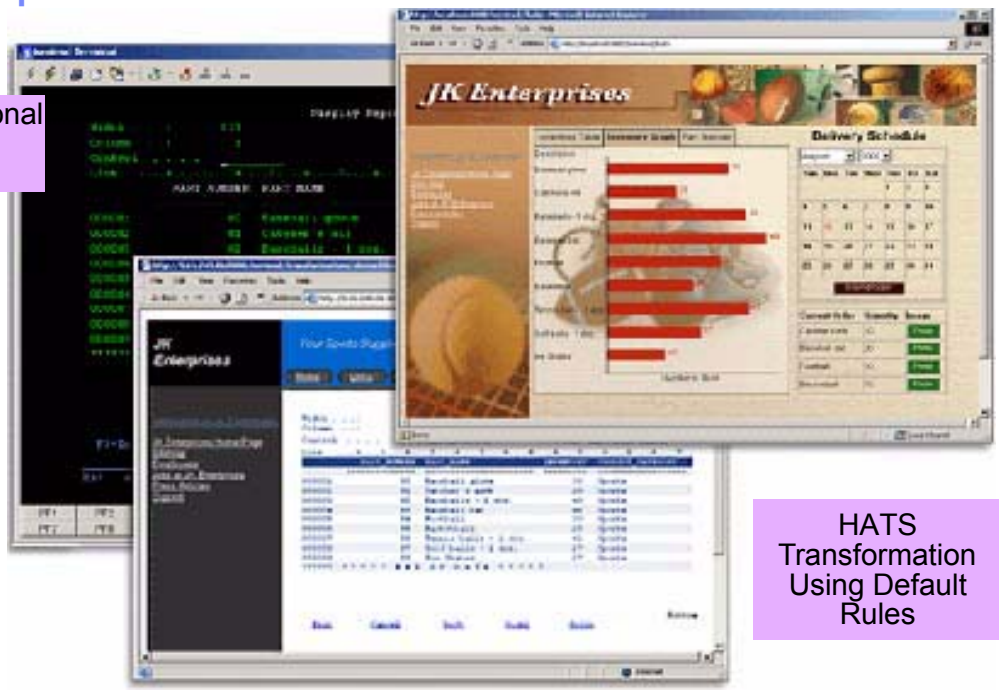
Example

Traditional Green Screen



HATS Transformation Using Default Rules

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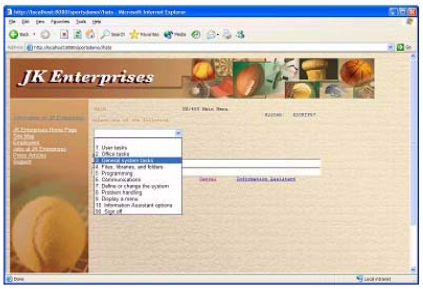
Differences - HATS vs HATS LE

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



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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

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IBM eServer iSeries

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

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