



Create a Linked WebFacing and HATS Application

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Chapter 1. Create a linked WebFacing and HATS application

In this tutorial, you will enable i5/OS® applications for the Web using two different techniques. First, you will use the IBM® WebFacing Tool to convert the original DDS source for an application. Then, you will use the Host Access Transformation Services (HATS) Toolkit to dynamically transform another application. Next, you will link the two applications to create an integrated, combined HATS/WebFacing application. Finally, you will customize the style and appearance of your integrated application so that it has a consistent look and feel.

Learning objectives

- Using WebFacing and DDS source files, enable a host application for the Web
- Using HATS, enable a host application for the Web, without the use of DDS source files
- Link your WebFacing and HATS applications into one application, using the Linked HATS/WebFacing Project wizard
- Find and work with a linked application, using the Project Explorer
- View and edit connection properties for a linked application
- Customize the linked application to provide a more consistent look and feel

Time required

60 minutes

Related information



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Introduction

In this tutorial, you will learn how to link a HATS/WebFacing enabled project with a HATS project, customize the resulting application, and test it.

Both the IBM WebFacing Tool and the HATS Toolkit offer ways to enable your core business applications for the Web. The IBM WebFacing Tool converts your original DDS source files, providing a Web-based user interface for your 5250 host application. The HATS Toolkit transforms 5250 data streams into HTML dynamically, which enables applications to be migrated to the Web without accessing or modifying the original source code.

You will use the WebFacing Tool to convert the DDS source for an order entry application. Then, using the HATS Toolkit, you will Web-enable a customer inquiry application (CelDial).

Next, you will use the linked HATS/WebFacing project wizard to link the HATS and WebFacing projects and create a single, linked enterprise application. This application utilizes the capabilities of both HATS and the WebFacing Tool.

You will then use the WebFacing Projects view to run and test the linked application. You will also use the Project Explorer view, which allows you to locate projects and change connection properties. Finally, you will learn how to change the display and style settings for the WebFacing project and the HATS project. These style settings let you render a linked application with a more consistent visual appearance.

Note: When working with your own core business applications, you will have to decide whether a linked HATS/WebFacing project is the best way to Web-enable your application, or if a standalone WebFacing or HATS project is better suited. While linked HATS/WebFacing projects generally allow you

to leverage the advantages of both WebFacing and HATS, several issues should be taken into account. For details on the unique features provided by WebFacing and HATS, refer to the Developing i5/OS™ WebFacing Applications or the Developing HATS Applications help topics. For more information about linked HATS/WebFacing applications, see the Considerations for Linked HATS/WebFacing Applications help topic.

Skill level

Introductory

Audience

Current and prospective HATS and WebFacing developers

System requirements

- IBM Host Access Transformation Services (HATS) for System i Version 7.1 product with the WebFacing tool installed. HATS and WebFacing installation requirements are listed in product documentation available at <http://publib.boulder.ibm.com/infocenter/hatshelp/v71/index.jsp>
 - Rational Developer for System i (RDi) Version 7.1
 - WebSphere® Application Server, Version 5.1 or later, must be installed to run and test your application. WebSphere Application Server is an available option when installing the base product. The WebSphere test environment is a runtime environment that is integrated into the workbench, for testing applications that are targeted to WebSphere Application Server. This is where you will run and test the HATS project, after first publishing your project to the test environment and starting the test server.
 - A trial license for two concurrent WebFacing connections is included. This trial license allows you to test your WebFacing projects in the WebSphere test environment.
 - All software updates available in the IBM Installation Manager should be applied and installed.
- i5/OS V5R4 or greater, with the latest PTFs installed

Prerequisites

- Verify installation of WebSphere Application Server 5.1 or greater in order to run the created applications.
- The WebFacing server must be running on your server. Verify that jobs QQFWFSVR and QQFVTSVR are running. This is done by using the WRKACTJOB JOB(QQF*) command in a 5250 session.
- Restore the WFLABXX savefile (WFLABXX.savf) on an i5/OS™ server:
 1. Import **wflabxx** project in **WFLABXX.zip** to your workspace.
 2. Open the Project Explorer view by clicking **Window** → **Show View** → **Other** → **General** → **Project Explorer**.
 3. Expand the **wflabxx** project.
 4. Right-click the **wflabxx.savf** savefile, and select **Restore on i5/OS**.
 5. Once the save file has been restored to the i5/OS server, you must then add the **WFLABXX** library to your default library list.

For additional details on working with remote i5/OS servers, you may want to complete the **Maintain an ILE application using Remote System Explorer RDi** tutorial.

- Verify all i5/OS PTFs required for Rational Developer for System i (RDi) have been installed. (Right-click **i5/OS Objects** and click **Verify Connection** on the pop-up menu).

Expected results

Upon completion of this tutorial, you will learn about the unique advantages offered by linked HATS/WebFacing projects. You will know how to create and link a HATS/WebFacing enabled project

with a HATS project. You will also be able to customize the style of the HATS and WebFacing projects to provide a unified visual appearance when they run as a linked application.

The following screen captures illustrate the stages of creating a linked HATS/WebFacing project, from the original 5250 terminal screens, to the WebFacing application and HATS application, and then to the customized, linked HATS/WebFacing application.

5250 Application

Application dashboard

```
DASHBOARD                               Application Dashboard
Select one of the following:
    1. Order Entry
    2. CelDial Communications

Selection or command
===> _

F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel
F13=Information Assistant  F16=System main menu
```

Order entry application

```
Parts Order Entry

Type choices, press Enter.
2=Change

Customer number . . . . . ____  Order number . . . . . :

F3=Exit  F4=Prompt  F6=Accept Order

MR a 06/033
```

Customer inquiry application (CelDial)

```

CELDIAL                               CelDial Communications

Select one of the following:

    1. Customer inquiry
    2. Work with inventory

Selection or command
===> _

F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel
F13=Information Assistant  F16=System main menu

```

WebFacing application

Application dashboard

```

GO DASH

DASHBOARD                               Application Dashboard

Select one of the following:

    1. Order Entry
    2. CelDial Communications

```

Order entry application

```

                                Parts Order Entry

Type choices, press Enter.
  2=Change

Customer number . . . . . 0001      Order number . . . . . :
Customer name . . . . . : Oakley, Annie O
Address . . . . . : 00001 Ave. ABC
                                Bldg 00001
City . . . . . : Des_Moines_      IO  07891-2345

Opt Part      Description                                Qty
                                       

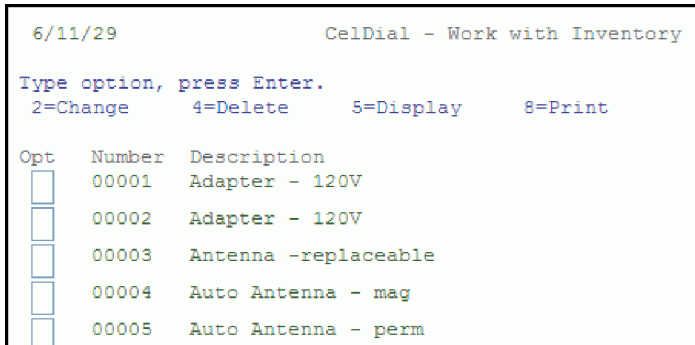
```

HATS application

Customer inquiry application (CelDial)

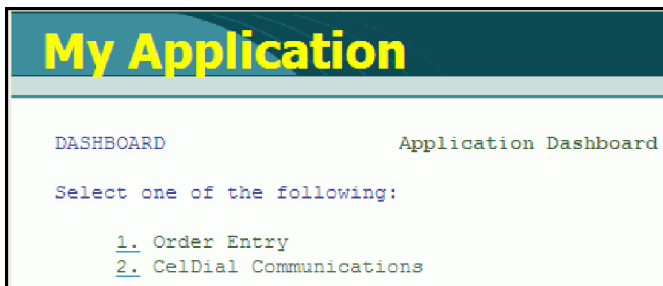


Work with inventory (CelDial)

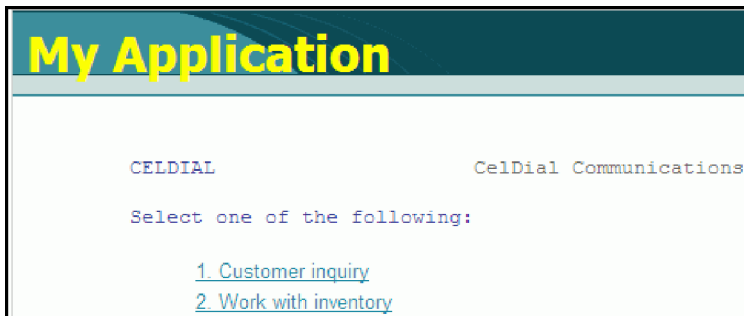


Linked and customized HATS/WebFacing application

Application dashboard: This application has been converted using the IBM WebFacing Tool.



Customer inquiry application (CelDial) : This application is shown using HATS.



Web-enabling an application with the IBM WebFacing Tool

In this module, you will use the WebFacing Tool to Web-enable a 5250 application, for which the original DDS source is available. The end result is a HATS/WebFacing enabled project that you will later link to a HATS project.

Learning objectives

After completing the lessons in this module, you will be able to perform these tasks:

- Start the workbench, then the HATS/WebFacing Enabled Project wizard
- Create a new HATS/WebFacing enabled project
- Set the i5/OS connection properties
- Select source members to convert
- Perform the source member conversion

Time required

This module should take approximately 10 minutes to complete.

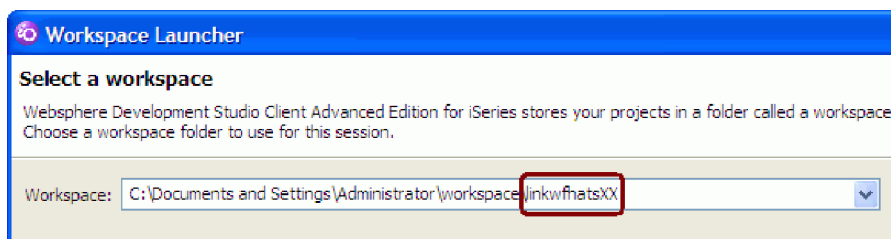
Starting the workbench

In this lesson, you start the workbench and set the workspace location.

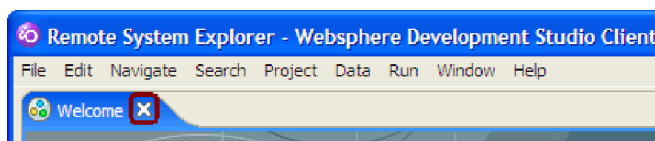
To begin creating a HATS/WebFacing enabled project, you need to start the workbench. You are asked to define a workspace for your System i projects. Defining a workspace keeps all of your files in an organized location.

To start the workbench

1. On the taskbar, click **Start > (All) Programs > IBM Software Development Platform > IBM Rational HATS 7.1 > HATS Toolkit 7.1**.
2. When prompted for a workspace location, accept the directory structure provided, but change the workspace name to `linkwfhatsXX`, where `XX` is a unique number. (If you are not automatically prompted by a dialog box, click **File > Switch Workspace**.)



3. Click **OK**. The user interface for the product, called the *workbench*, opens to the initial **Welcome** view. Your work will be saved in the directory that you specified as your workspace location.
4. Close the Welcome view by clicking the **X** button in the **Welcome** tab.



You can now begin working with the workbench.

You have started the workbench and set your workspace location.

Lesson checkpoint

You learned these things:

- How to start the workbench
- How to specify the name of the workspace

Creating a HATS/WebFacing enabled project

In this lesson, you learn how to begin creating a HATS/WebFacing enabled project.

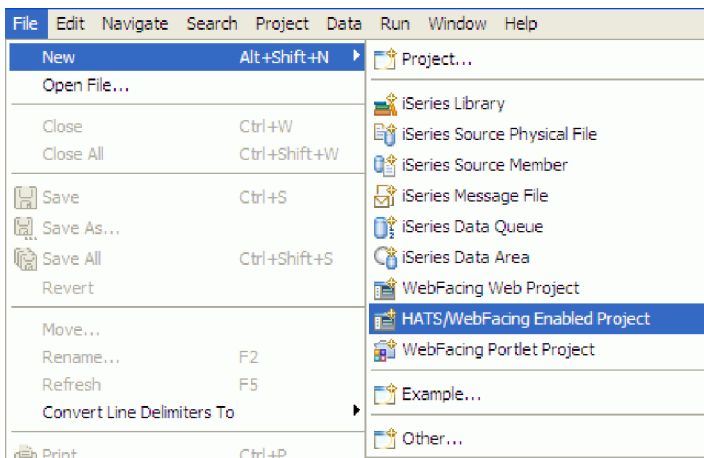
By creating a HATS/WebFacing enabled project, you can convert the 5250 application source files from your i5/OS server into a Web-enabled format. The HATS/WebFacing enabled project also allows you to take advantage of the new interoperability features between HATS and WebFacing, by creating a Linked HATS/WebFacing project later.

Unlike standalone WebFacing projects, HATS/WebFacing enabled projects are designed to work in conjunction with HATS projects and *cannot* be run standalone.

The workbench initially displays the Remote System Explorer (RSE) perspective. This perspective allows you to establish and manage connections to remote servers. You can also establish a connection when creating a project, which is what you will do later in this tutorial.

To create a new HATS/WebFacing enabled project:

1. Click **File > New > HATS/WebFacing Enabled Project** from the workbench menu.



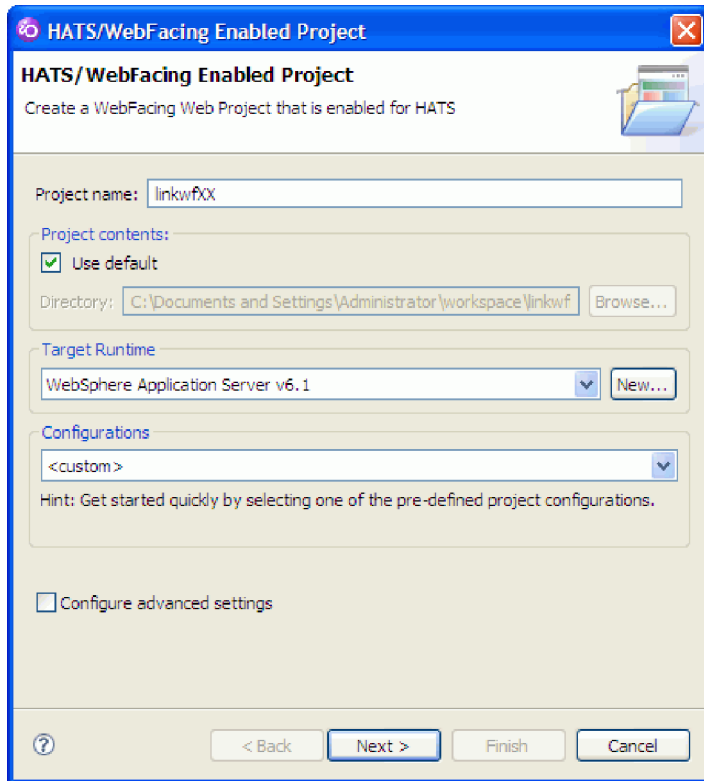
The HATS/WebFacing Enabled Project wizard opens.

Tip: Pressing the F1 key at any stage of the HATS/WebFacing Enabled Project wizard will provide additional information about the current window or view and settings.

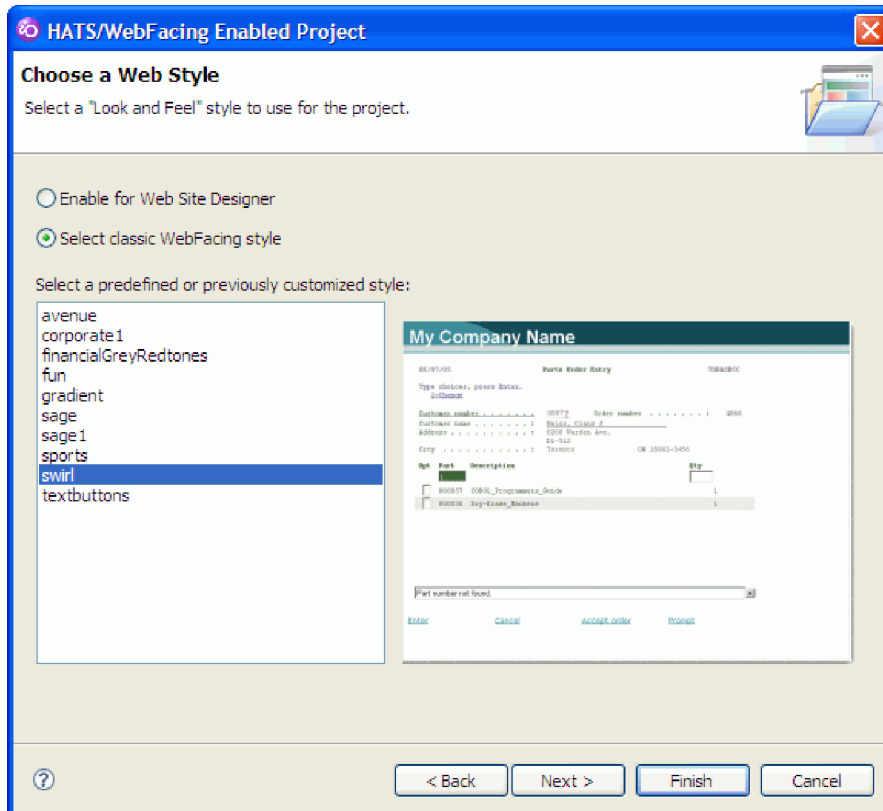
2. In the **Project name** field, type the project name `linkwfXX`, where XX is a unique number.

Note: It is probably easiest to use the same value for XX that you used when naming your workspace and your HATS/WebFacing enabled project.

3. Select **WebSphere Application Server v6.1** (if available, otherwise select **WebSphere Application Server v5.1** or later) from the **Target Runtime** field. Leave the default values for the rest of the fields.



4. Click **Next**. The Choose a Web Style page opens.
5. On the Choose a Web Style page, leave the **Select classic WebFacing style** radio button selected, and select **swirl** from the styles list.



Note: The financialGreyRedtones and swirl styles have matching styles for HATS projects. In order to provide a unified user interface across both HATS and WebFacing applications, select one of these styles.

6. Click **Next**. The Select Source Members to Convert page opens. You will do more work on this wizard page in the next lesson.

You have launched the HATS/WebFacing Enabled Project wizard. You also provided a name, project settings and a style for the HATS/WebFacing enabled project.

Lesson checkpoint

You learned these things:

- About HATS/WebFacing enabled projects
- How to begin creating a HATS/WebFacing enabled project
- How to select a HATS/WebFacing enabled project style

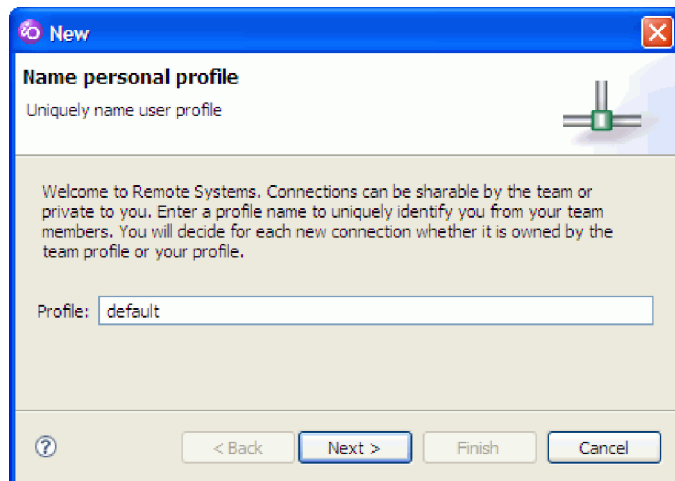
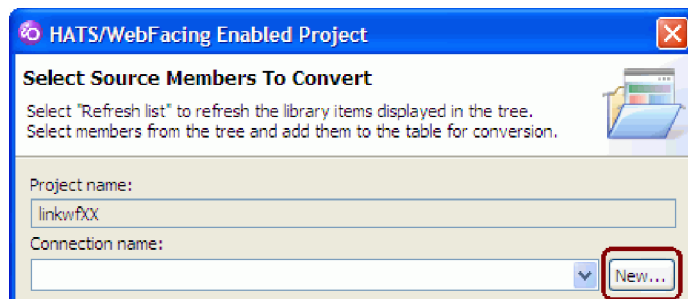
Setting System i connection properties

In this lesson, you learn how to set i5/OS connection parameters for your HATS/WebFacing enabled project.

You must establish a connection to a remote i5/OS server in order to select source members and run applications. Once the connection is established, it will be available to all projects in the workspace.

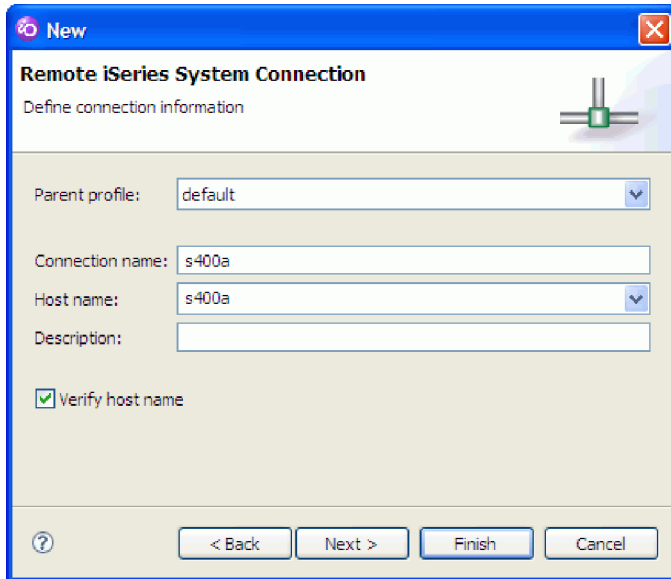
To connect to a i5/OS:

1. Click **New** beside the **Connection name** list.



2. On the Name personal profile page, accept the default profile name, as this is your own private connection. Click **Next**.

3. On the Remote i5/OS System Connection page, in the **Host name** field, type the name or IP address of the host system, for example s400a. (Do not use the example shown unless your system is named s400a.)

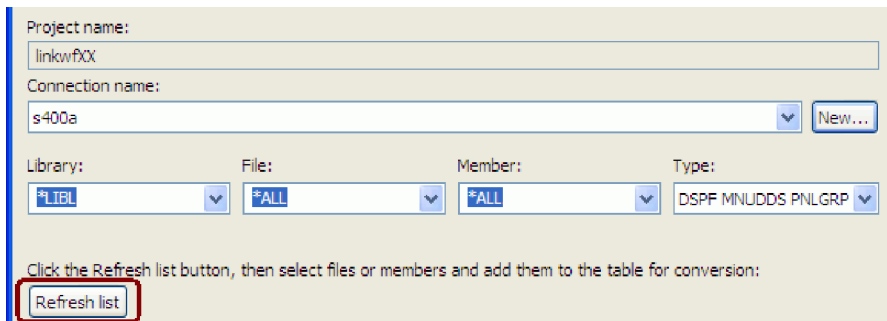


The **Connection name** field is automatically filled with the same value.

4. Leave the **Verify host name** check box selected to verify that the host name or IP address exists.
5. Click **Finish**.

The connection is created and can be re-used by all tools in the workbench. It also opens in the Remote Systems view. The connection wizard also confirms that the i5/OS host can be reached. If this test is completed successfully, you return to the Select Source Members to Convert page.

6. Confirm that your i5/OS host name is selected in the **Connection name** list.
7. Make sure that *LIBL is selected in the **Library** list. Both the **File** and **Member** lists should have *ALL selected, and the **Type** field should contain DSPF MNUDDS PNLGRP.
8. Click **Refresh list**.



A user ID and password dialog box opens. Before you can select source members to convert, you must log on to the remote i5/OS system.



9. In the **User ID** field, type the name of an i5/OS user profile that has access to the WFLABXX library.
10. In the **Password** field, type the password for this user profile; select the **Save user ID** and **Save password** check boxes; and click **OK**.

A connection to the i5/OS server is established. The library list of your i5/OS profile is displayed under the **Refresh list** button on the Select Source Members to Convert page.

Lesson checkpoint

You learned these things:

- How to create a new connection profile
- How to establish a connection to a i5/OS server
- How to provide a connection profile on the Select Source Members page
- How to provide your i5/OS user ID and password

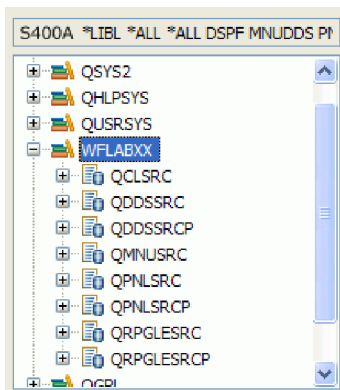
Selecting source members

In this lesson, you select source members to be converted for the HATS/WebFacing enabled project.

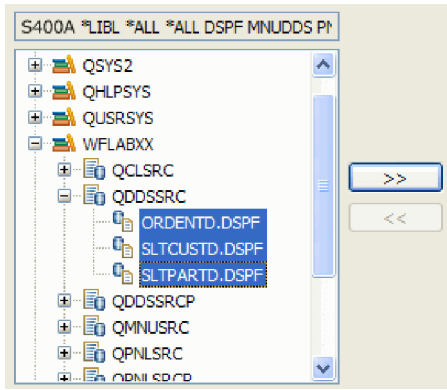
In order to convert an application using the IBM WebFacing Tool, you must provide a list of source members to convert from the remote i5/OS server. The WebFacing Tool will generate a Web interface for your application based on these source members.

To select source members to convert:

1. Select the **WFLABXX** library from the list.
2. Click the plus sign (+) beside the **WFLABXX** library to expand it.



3. Expand the **QDDSSRC** source file, and select all its members.



- Click the push button to copy the selected members over to the list of members to be converted.

Tip: To move all members in a source file, you can select the source file icon itself and click the push button . This adds all members in a source file to the list of members to be converted. To select multiple source files, hold down the Ctrl key while clicking each one.

- Select the **QMNUSSRC** and **QPNLSSRC** source files, and click the push button to copy the selected members over to the list of members to be converted.

You have selected the source members that will be converted. The conversion has not happened yet, but the information is stored for future use.

The list of source files now shows your selected source members.

Library	File	Member	Type
WFLABXX	QDDSSRC	ORDENTD	DSPF
WFLABXX	QDDSSRC	SLTCUSTD	DSPF
WFLABXX	QDDSSRC	SLTPARTD	DSPF
WFLABXX	QMNUSSRC	DASH	MNUDDS
WFLABXX	QPNLSSRC	ORDENTRPNL	PNLGRP

- Click **Next** to proceed to the Specify CL Commands page of the wizard.

You have selected the source members for the WebFacing Tool to convert.

Lesson checkpoint

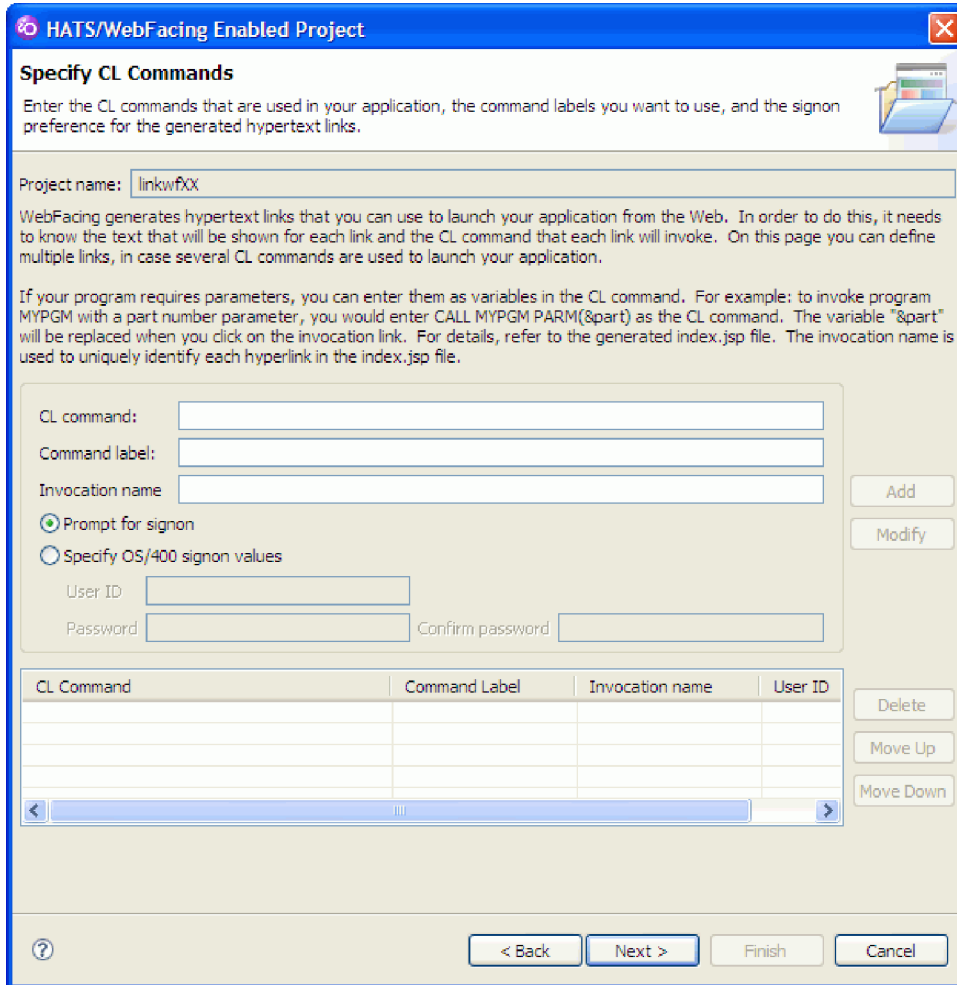
You learned these things:

- How to select source files and members for the WebFacing Tool to convert
- About the conversion list

Completing creation of the HATS/WebFacing enabled project

In this lesson, you will complete the creation of your HATS/WebFacing enabled project and convert its source members.

At this point, you are on the Specify CL Commands page of the HATS/WebFacing Enabled Project wizard:



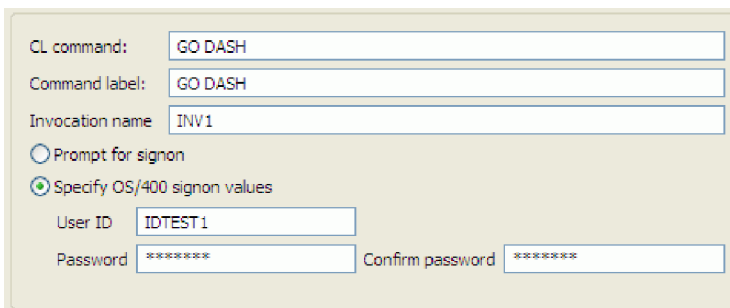
CL command entries are used to generate a menu, which appears when you run a WebFacing project. You will specify a CL command for the application.

To add a CL command and complete creation of the HATS/WebFacing enabled project:

1. On the Specify CL Commands page, enter GO DASH in the **CL command** field. The GO DASH command launches the Dashboard menu, which allows access to both the order entry and the customer inquiry (Celdial) applications.

By default, the **Command label** field is set to the CL command that you specified, and the **Invocation name** field is set to INV1.

2. Select the **Specify i5/OS signon values** radio button. The authentication boxes are populated with the user ID and password you provided for the i5/OS connection.

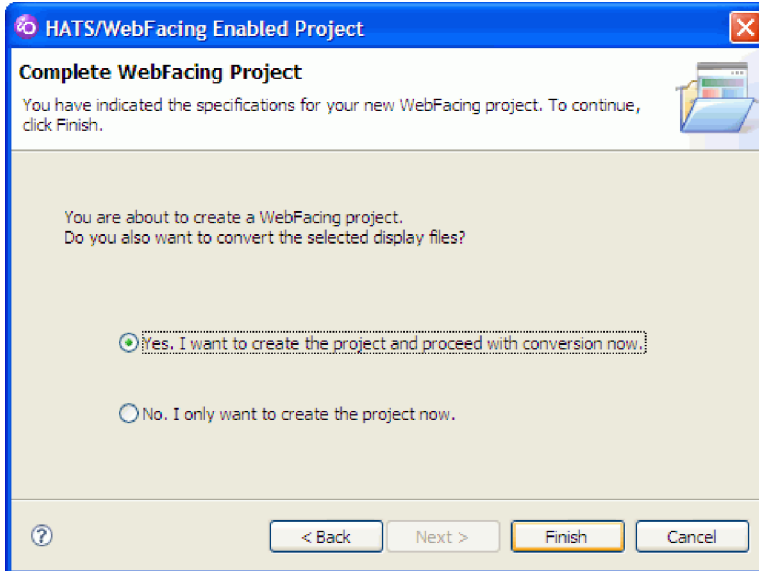


3. Click the **Add** button to add the command to the CL commands list.

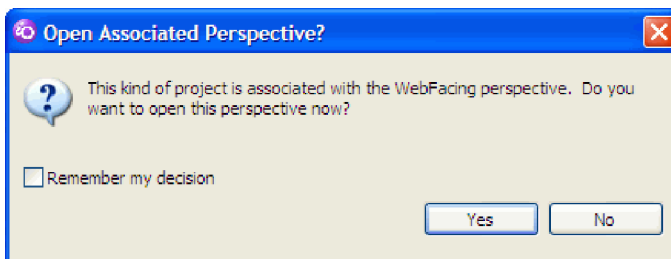
CL Command	Command Label	Invocation name
GO DASH	GO DASH	INV1

You have added a CL command. Now, you will complete the creation of the HATS/WebFacing enabled project.

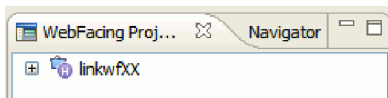
- Click **Next**.
- On the Complete WebFacing Project page, select **Yes. I want to create the project and proceed with conversion now**.



- Click **Finish**.
The HATS/WebFacing enabled project is created, and source member conversion automatically begins.
- When you are prompted to confirm that you want to switch to the WebFacing perspective, click **Yes**. The WebFacing perspective allows you to work with the project resources and view its files.



The WebFacing perspective opens, with your new HATS/WebFacing enabled project in the WebFacing Projects view. The new HATS/WebFacing enabled project is denoted by the icon shown here:



You have created the HATS/WebFacing enabled project and converted its source members.

Lesson checkpoint

You learned these things:

- How to add CL commands to a HATS/WebFacing enabled project
- How to complete creation of a HATS/WebFacing enabled project

- About the WebFacing perspective

Module summary

In this module you learned how to create a HATS/WebFacing enabled project that can later be linked to a HATS project. You also learned how to specify a visual style for your project, create a connection, add CL commands, and convert selected DDS and UIM source members.

Lessons learned

By completing this module, you learned about the following concepts and tasks:

- How to start the workbench
- How to create a new HATS/WebFacing enabled project
- About connecting to a remote i5/OS server during project creation
- About the Remote System Explorer and WebFacing perspectives

Assessment

- How do you create a new project in the workspace?
- What is the HATS/WebFacing Enabled Project wizard?
- List the steps to create a new connection to a System i from the HATS/WebFacing Enabled Project wizard.
- List the steps to create a HATS/WebFacing enabled project.
- What perspective allows you to work with HATS/WebFacing enabled projects?

Creating a HATS application

In this module, you will create a new HATS project to run the 5250 customer inquiry (CeIDial) application. You will also run and test the application in the WebSphere test environment. Finally, you will create a HATS macro to automatically perform a command when the customer inquiry application is run.

Learning objectives

After completing the lessons in this module, you will be able to perform these tasks:

- Create a new HATS project
- Run and test the customer inquiry application in the WebSphere test environment
- Create a HATS macro

Time required

This module should take approximately 10 minutes to complete.

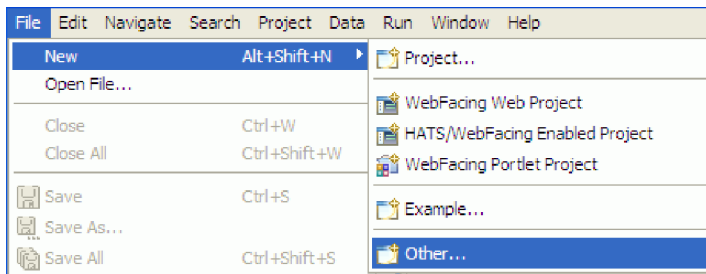
Creating a new HATS project

In this lesson, you will create a new HATS project using the Create a Project wizard.

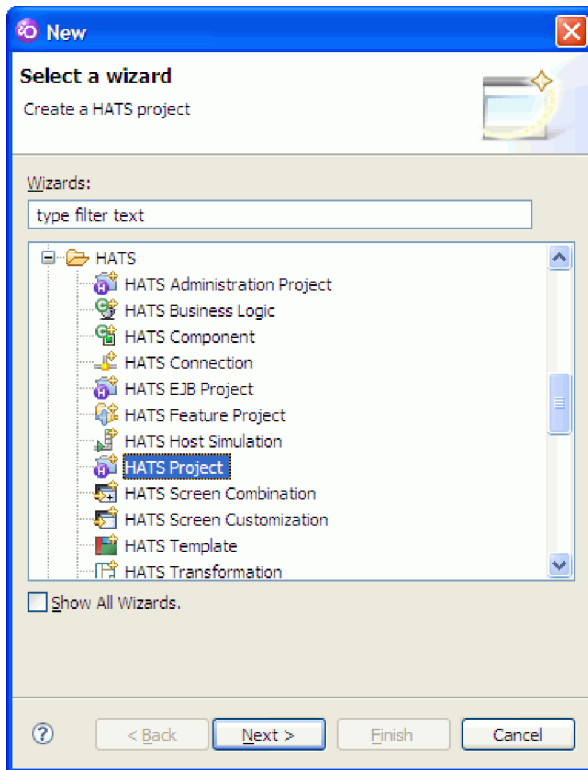
Unlike a HATS/WebFacing enabled project, which transforms a particular set of 5250 application source files, a HATS project transforms the data stream from the remote i5/OS server without requiring conversion. When testing your HATS project, you can use a display terminal to observe interactions between the HATS application and the host application.

To create a new HATS project:

1. Click **File > New > Other**.

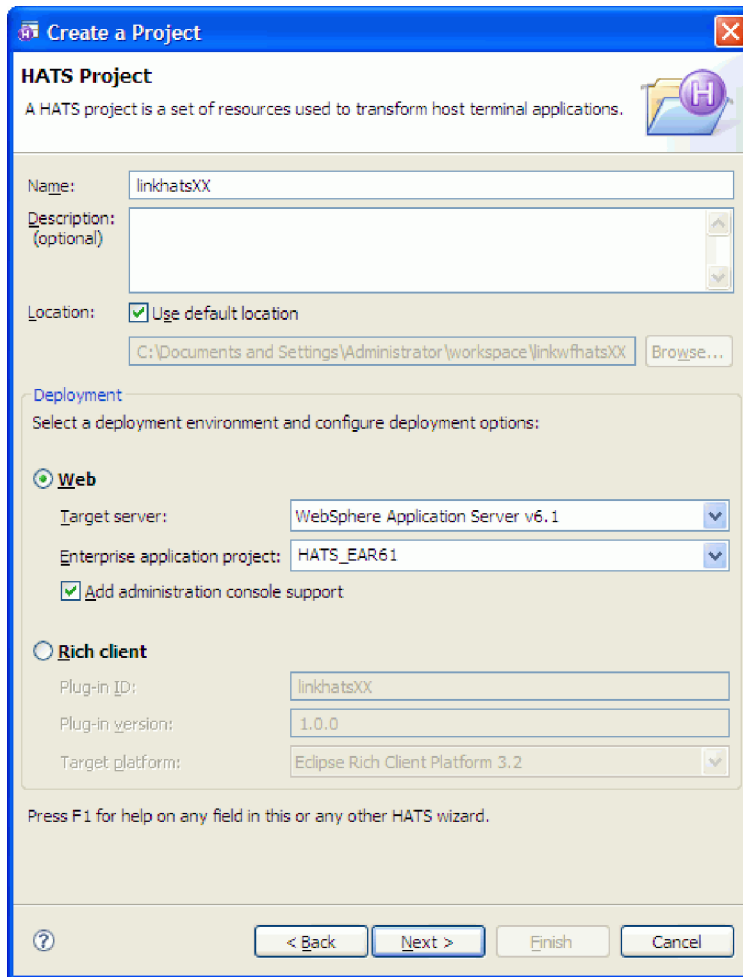


2. In the New wizard, expand the **HATS** folder, and select **HATS Project**.

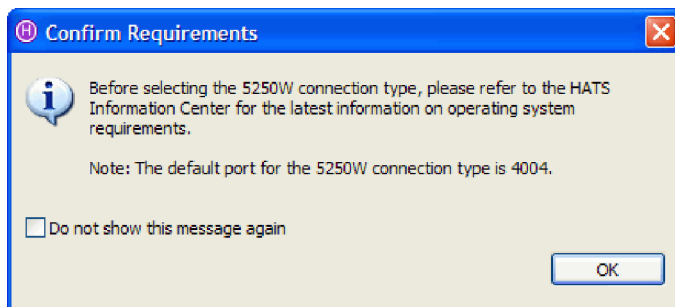


3. Click **Next**.
4. On the Create a Project page, enter linkhatsXX in the **Name** field. Leave the default settings for the **Description**, **Location** and **Deployment** fields.

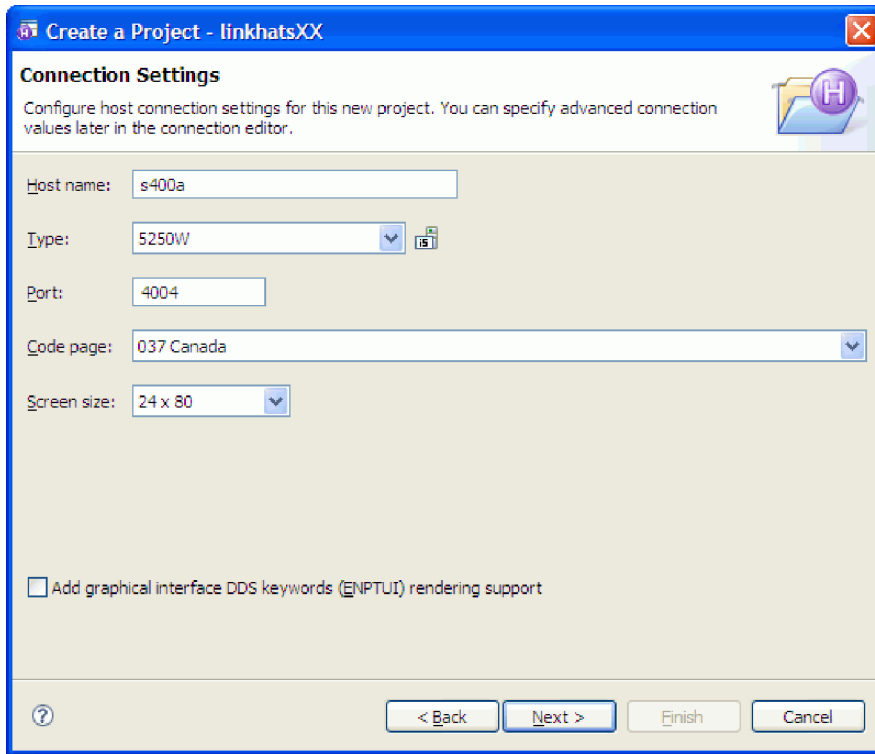
Note: You can only link a HATS project to a WebFacing project when you select the **Web** deployment option.



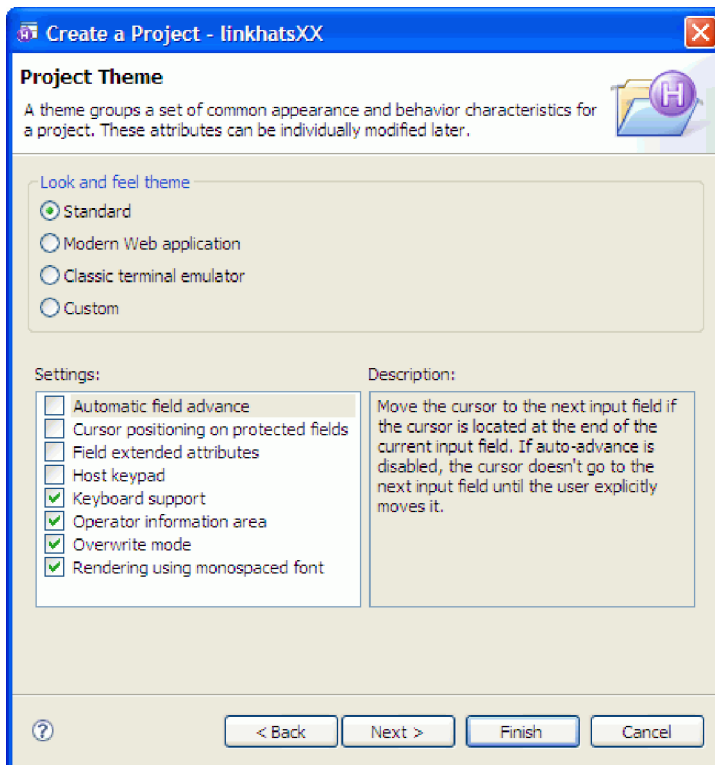
5. Click **Next**. The Connection Settings page opens.
6. On the Connection Settings page, enter the host name or IP address for your i5/OS server, for example, s400a.
7. In the **Type** drop-down box, you can select either a 5250 connection or a 5250W connection. 5250 connections use the standard System i Telnet connection, while 5250W connections use the WebFacing server installed on the remote System i. Regardless of which connection type is selected for the HATS project, a 5250W connection will be used when it is run as part of a linked HATS/WebFacing application.
Select **5250W** in the **Type** drop-down box.
8. When the Confirm Requirements message box opens, click **OK**.



9. The **Port**, **Code page** and **Screen size** fields are now enabled. These fields contain default connection settings. If your WebFacing server runs on an alternative port, or your i5/OS server uses a different code page or works with another screen size, select the appropriate options from the drop down boxes. Otherwise, accept the default values.



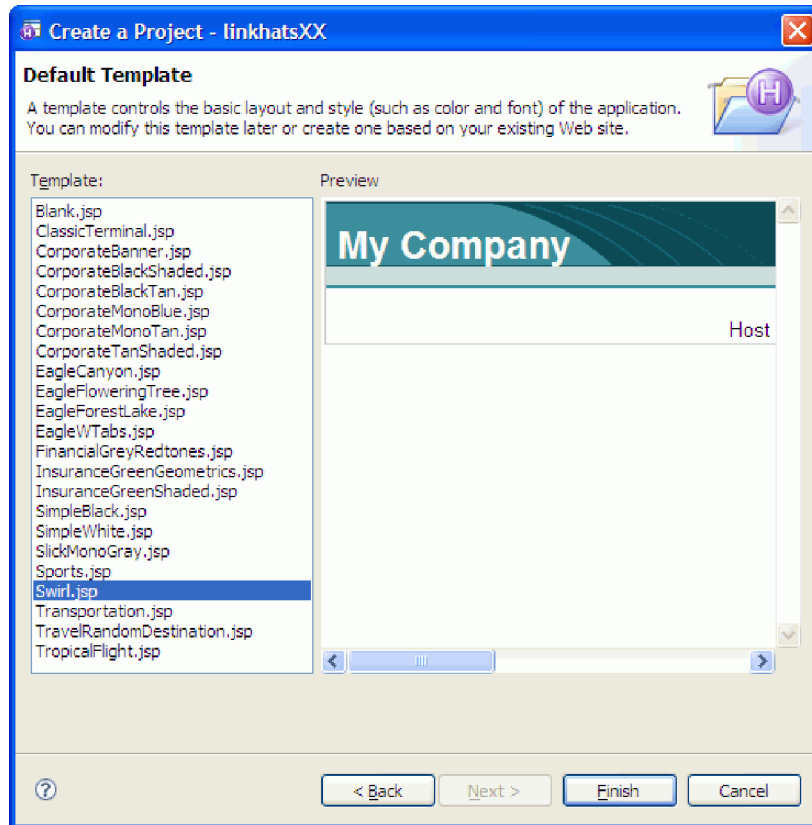
10. Click **Next** to proceed to the Project Theme page.



The Project Theme page allows you to customize the behavior of the application, using themes that closely reflect a specific application environment. For example, the **Modern Web application** theme

will make the HATS project act as if it were a typical Web application, with manual advancing of fields and variable width fonts. The **Classic terminal emulator** theme applies all the available settings, making the application act in a similar fashion to its operation on the 5250 terminal. You can also select individual custom settings.

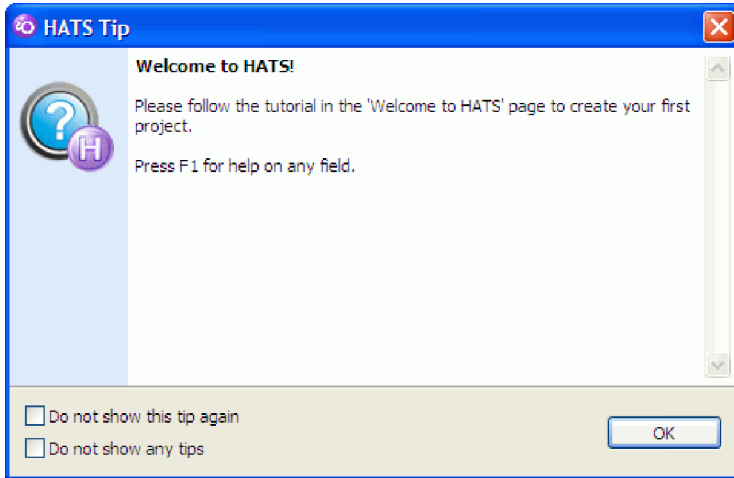
11. Select the **Standard** radio button, which provides a balance between a modern Web application and a classic terminal emulation, and click **Next**.
12. On the Select Default Template page, select **Swirl.jsp** from the list of templates. This template will closely match the style of your HATS/WebFacing enabled project.



13. Click **Finish**.

The Create a Project wizard completes and the workbench switches to the Host Access Transformation Services perspective. Your new HATS project has been created, and the HATS project overview opens in the editor area.

If a HATS Tip message box opens, read the message, and then click **OK**.



Lesson checkpoint

You learned these things:

- About HATS projects
- How to create a new HATS project
- About different connection types for HATS projects
- How to specify connection settings for a HATS project
- How to select a visual style for a HATS project

Running and testing the HATS application

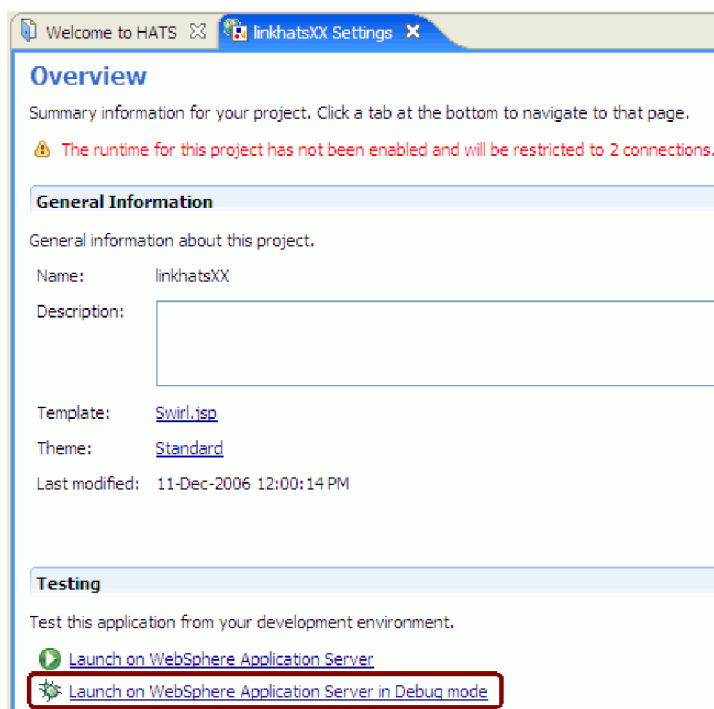
In this lesson, you will run and test the customer inquiry application by launching the HATS project in the WebSphere test environment.

The WebSphere test environment is a runtime environment that is integrated into the workbench, for testing applications that are targeted to WebSphere Application Server. This is where you will run and test the HATS project, after first publishing your project to the test environment and starting the test server.

When you run a HATS project in the test environment, you have the option to display a debug terminal, so that you can view the native System i connection while testing and debugging your application.

To run and test the customer inquiry application in the HATS project:

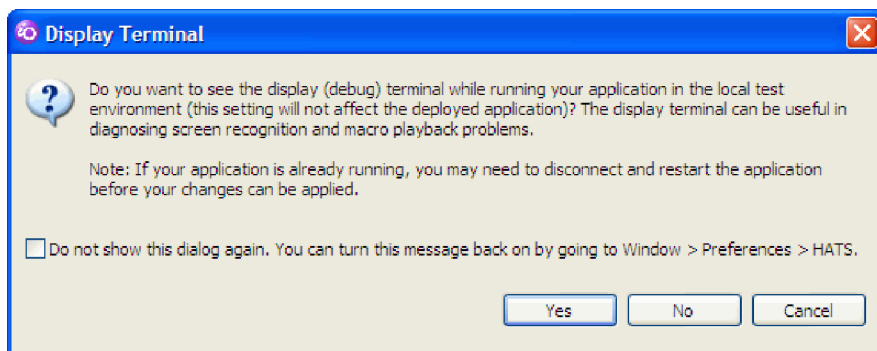
1. In the editor area of the workbench, click the **linkhatsXX Settings** tab. In the Testing section of that page, click the **Launch on WebSphere Application Server in Debug mode** link.



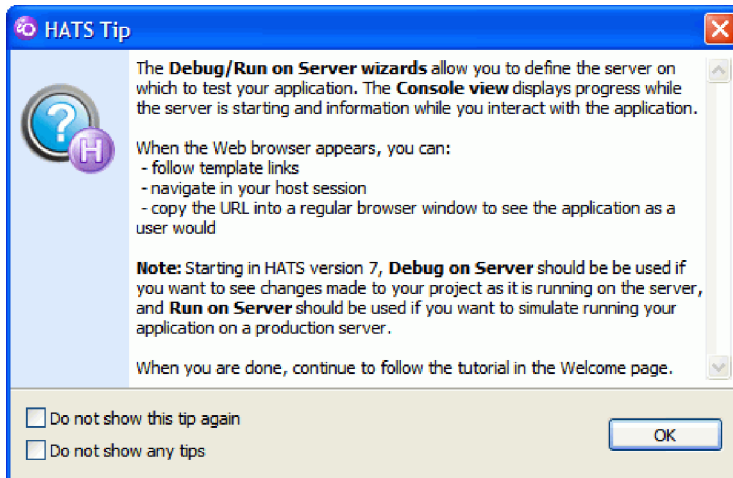
Important: Before you test your application, verify that the WebFacing server is running on your the server. Verify that jobs QQFWFSVR and QQFVTSVR are running. This is done by using the WRKACTJOB JOB(QQF*) command in a 5250 session.

If these jobs are not running then you need to start the WebFacing server. On a CL command line, type `strtcpsvr *webfacing`.

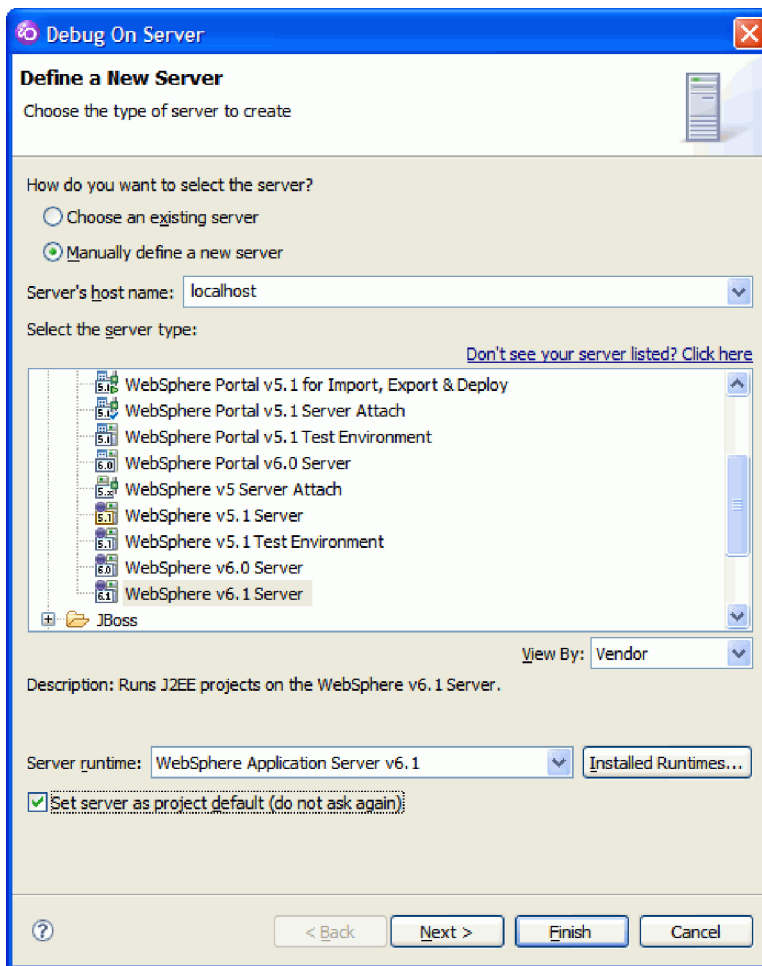
2. When the Display Terminal dialog box opens, click Yes to confirm that you also want to see your 5250 application screens in the debug terminal as you run your HATS project.



The HATS Tip dialog box opens. This dialog provides information about the Debug/Run on Server wizards and Console view. Once you have read the information, click **OK** to continue.



The Debug on Server wizard opens.



3. The WebSphere test environment provides a local WebSphere Application Server instance on your workstation for testing Web applications. You will use the WebSphere test environment to quickly view and test your HATS project, without needing to publish the project to a remote WebSphere Application Server.

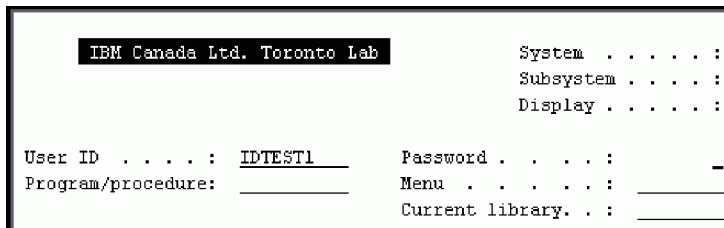
You have a choice of installing and testing on different versions of WebSphere Application Server in the workbench test environment. HATS projects can run on WebSphere Application Server, versions 5.1 and later. Select the same version of WebSphere Application Server that you specified when you created the HATS project.

4. Click **Finish**.

The WebSphere Application Server test environment starts, and your HATS project is published there. The display terminal also opens. After a few moments, a Web browser opens in the editor area of the workbench.

5. Switch between the Web browser view and the display terminal. Notice how the HATS application has transformed the host screen to a Web look and feel and applied the "swirl" theme that you selected when you created the project.

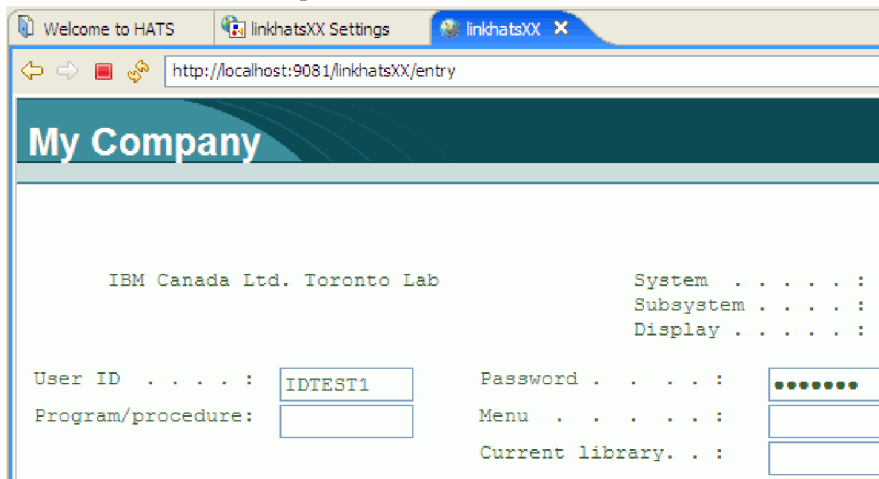
6. To demonstrate the Refresh button functionality and synchronization between the terminal and browser windows, type your user ID and password in the Terminal window. Do *not* press Enter yet. (Your sign-on screen may appear differently than the following screen captures.)



7. Switch to the Web browser view and click the **Refresh** button in the set of application keypad buttons.



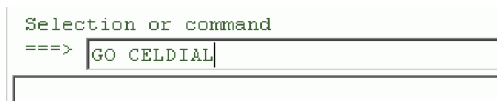
The page refreshes the display from the i5/OS connection. The user ID and password fields should contain the user ID and password entered in the Terminal window.



You can minimize the Terminal window and work with your HATS application entirely within the Web browser.

Press Enter to sign on to the remote i5/OS system. (Press Enter again, if necessary, to continue the sign-on request.) HATS dynamically transforms the 5250 data stream from the remote system and displays the initial command line.

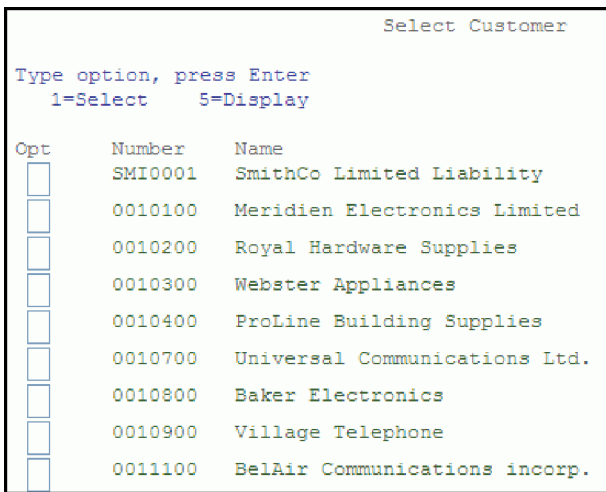
8. To test the customer inquiry (CelDial) application, enter GO CELDIAL on the command line to launch the CelDial menu.



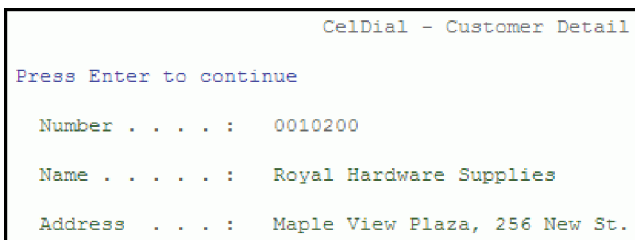
The CelDial menu opens.



9. Click **1. Customer inquiry** to access the customer inquiry screen.
10. Press F4 to access the customer list prompt.

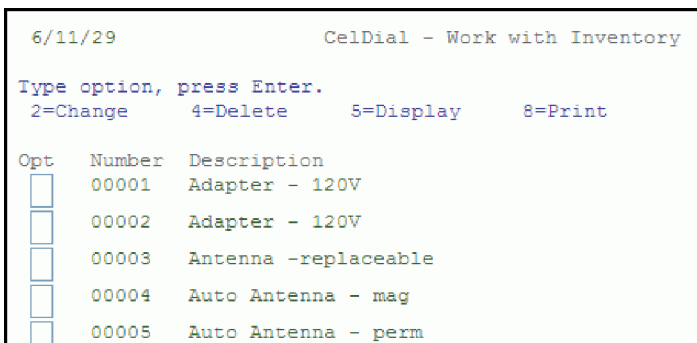


11. Type 1 beside a customer name and press Enter to select that customer. The customer number appears in the Customer number field. Press Enter again to view this customer's information.
12. The Customer Detail page opens.



When you are done viewing the information, close the page by pressing Enter, and then press F3 to return to the main CelDial Communications menu.

13. Click **2. Work with inventory** to access the Work with Inventory screen.



14. Select a part from the list and type 5 beside it to display detailed part information.
- 24** Create a Linked WebFacing and HATS Application

```

Mode: DISPLAY                               CelDial - Part Detail
Part number . . . . . 00003
Inventory detail
Description . . . . . Antenna -replaceable
Quantity on hand . . . . . 40
Model . . . . . m7
Ship date . . . . . 19970817

```

To view another part, press F12 to return to the part selection page.

Note: You can further enhance your HATS project using the many customization features available to it, such as macros. For more details, please refer to the HATS Getting Started help topic, or the User's and Administrator's Guide.

15. Press F3 to return to the main CelDial menu.

You have successfully run and tested your HATS project in the WebSphere test environment.

Lesson checkpoint

You learned these things:

- About the WebSphere test environment
- About the debug terminal for testing a HATS project
- How to display the debug terminal
- How to run and test a HATS project in the WebSphere test environment

Creating a HATS macro

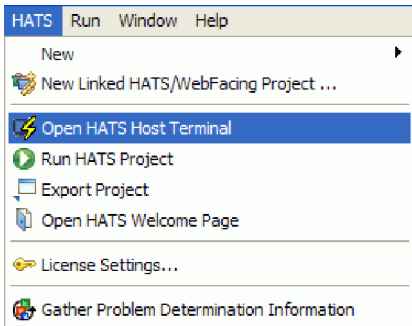
In this lesson, you will learn about HATS macros, which allow automation of tasks when running a HATS application. You will create a macro that automates entering a command in the customer inquiry (CelDial) application.

One of the unique features of a HATS project involves the ability to create macros. Macros allow sequences of keystrokes to be recorded and sent to the remote i5/OS server when certain events occur. They allow you to prompt the user for input, extract data from the host screen, and move from one screen to another without showing the intermediate screens. For example, a macro can automatically perform commands when you open an application.

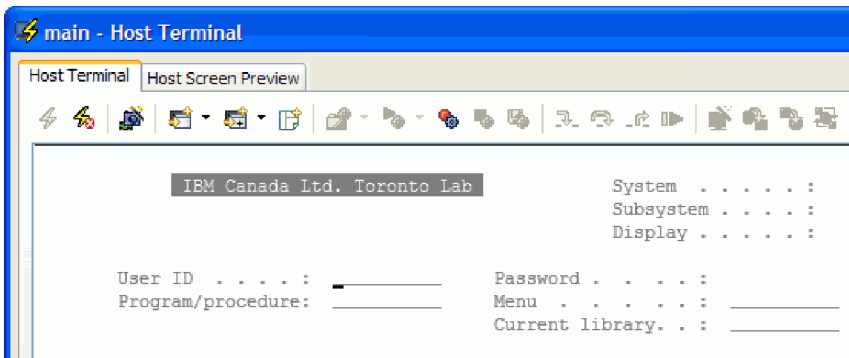
In this example, when you run the application on the Web, you may not want to show the initial CelDial menu. Instead, you want to invoke the inventory application directly, without giving the end user a chance to select the customer inquiry option. To accomplish this, you will create a new HATS macro that automatically selects option 2 on the CelDial menu, which invokes the inventory application.


To create a new HATS macro:

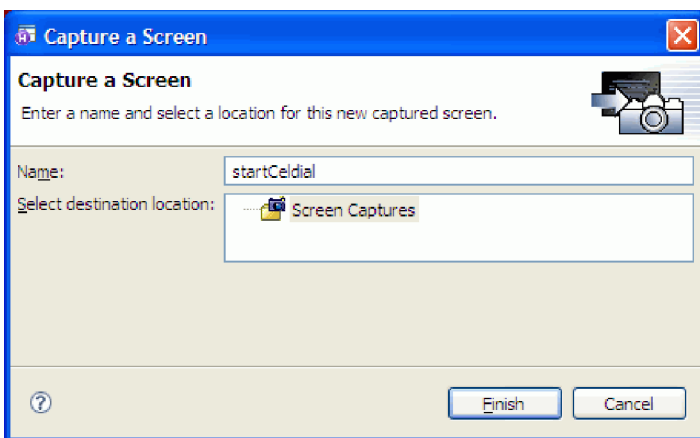
1. Select the **linkhatsXX** project, and click **HATS > Open HATS Host Terminal**. (If you do not see the HATS menu item, switch to the Host Access Transformation Services perspective by clicking **Window > Open Perspective > Other > Host Access Transformation Services**.)




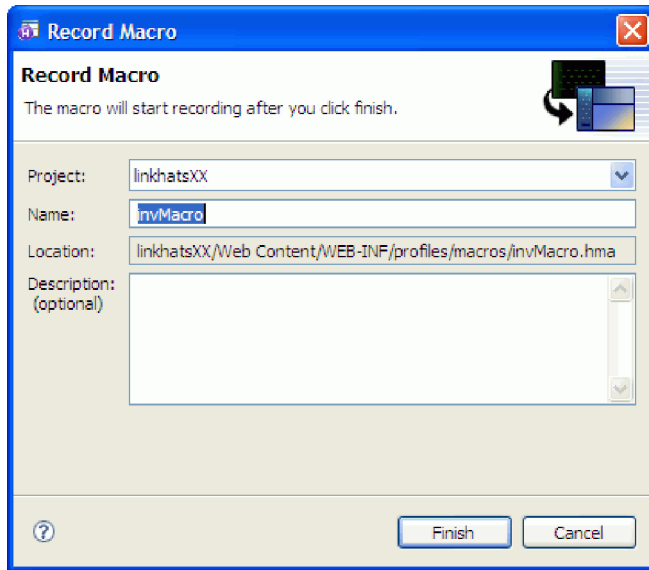
A new HATS host terminal window opens and displays the default sign-on screen for your HATS connection. (The i5/OS screens may appear different in your environment.) If the HATS Tip window opens, read the information about the Host Terminal, and then click **OK** to close the HATS Tip window.



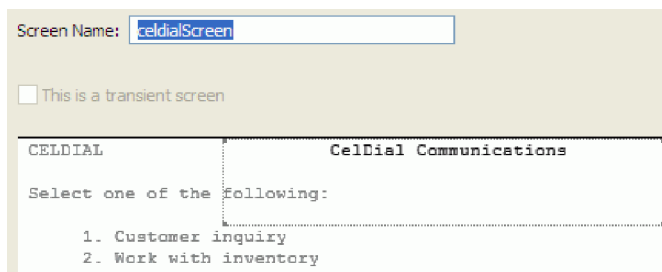
2. Sign on to the remote i5/OS server using the Host Terminal window. The i5/OS main menu opens.
3. At the command line, enter GO CELDIAL and press Enter to access the customer inquiry (CelDial application).
4. You will record a screen capture of the customer inquiry (CelDial) application. A screen capture is necessary for HATS to recognize the CelDial menu, so that the appropriate macro can be run when the CelDial application opens. Click the  **Create Screen Capture** button in the toolbar. The Capture a Screen dialog opens.




5. Enter startCeldial in the **Name** field, and click **Finish**. The screen capture is saved in your workspace.
6. Click the  **Record new macro or insert to the open macro** button in the toolbar to begin the macro recording process. The Record Macro dialog opens.
7. Enter invMacro in the **Name** field, and click **Finish**.

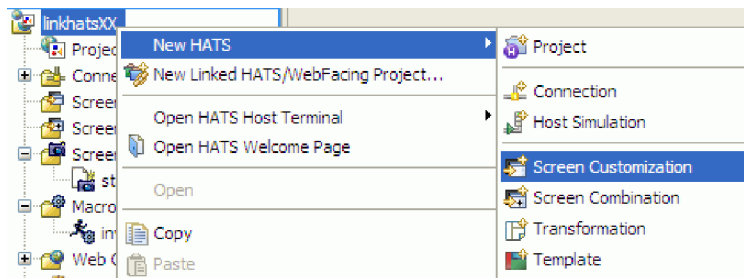


8. The Define Screen Recognition Criteria page opens.

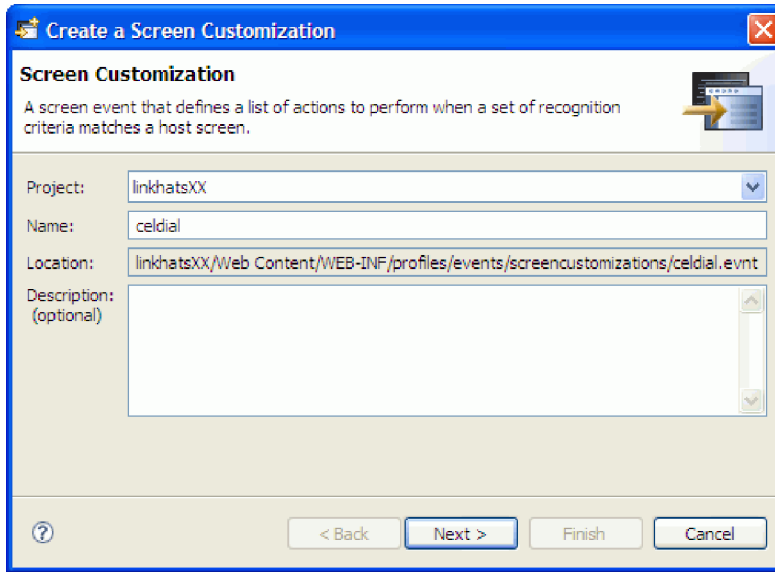


In the **Screen Name** field, type `celdialScreen`. Accept the default selection area, and click **Next**.

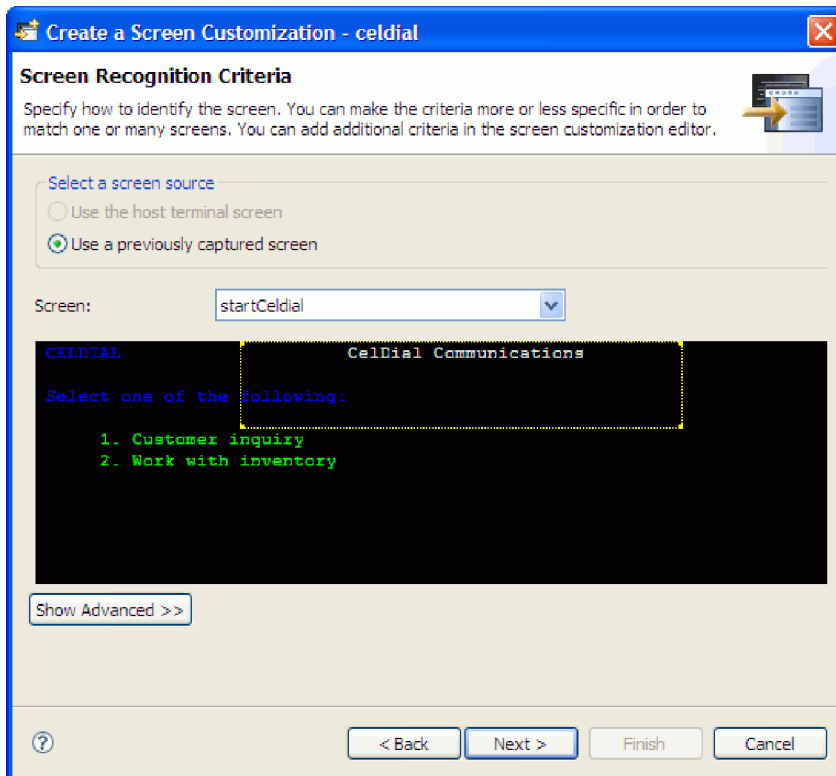
9. Click **Finish**. The macro recording process begins.
10. Type `2` and press Enter. Notice that as you type commands, they appear in the Macro Navigator. After you press Enter, the Work with Inventory menu is displayed in the terminal area.
11. Click  **Stop Macro** in the toolbar to end the macro recording process. The Define Screen Recognition Criteria dialog appears.
12. In the **Screen Name** field, type `exitScreen`. Click **Finish** to complete the macro recording process.
13. Close the Host Terminal window. When you are prompted to save the macro, click **Yes**. The macro is saved in your workspace.
14. To launch the macro when the CELDIAL menu is displayed, you will create a screen customization. Right-click the `linkhatsXX` project in the HATS Projects view, and select **New HATS > Screen Customization**. The Create a Screen Customization dialog opens.



15. In the **Name** field, enter `celdial`, and click **Next**.

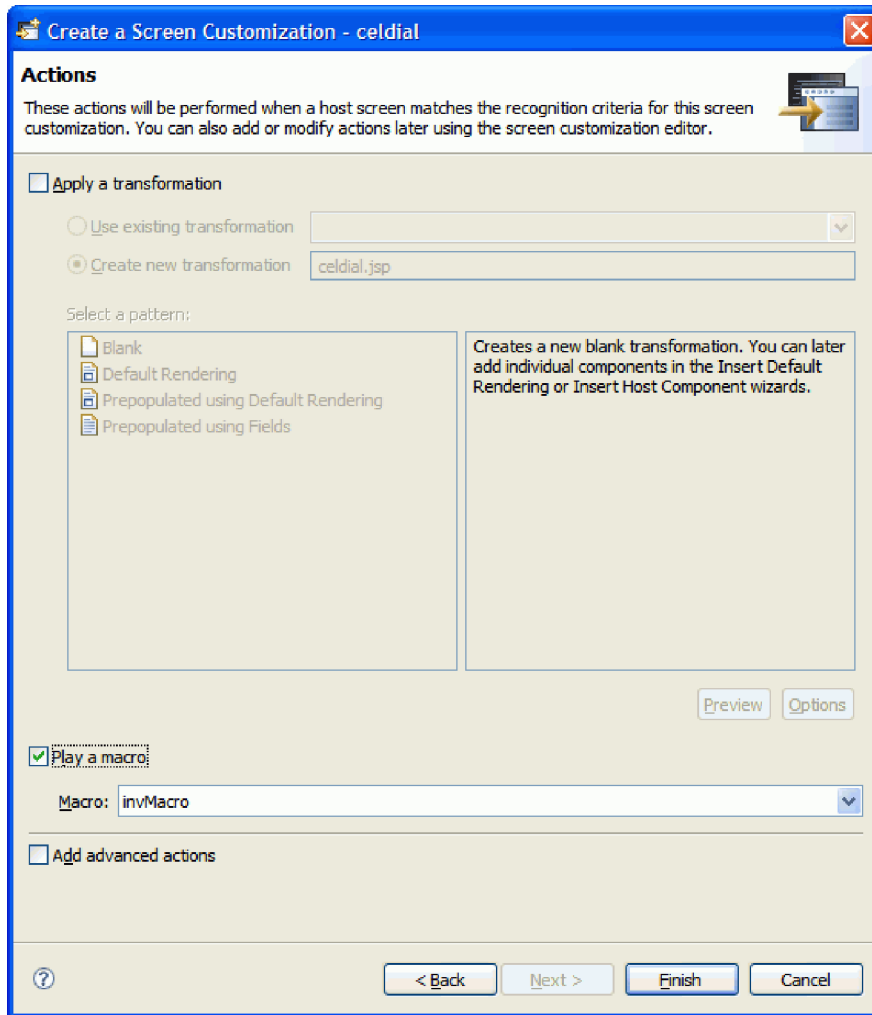


16. The Screen Recognition Criteria page opens.

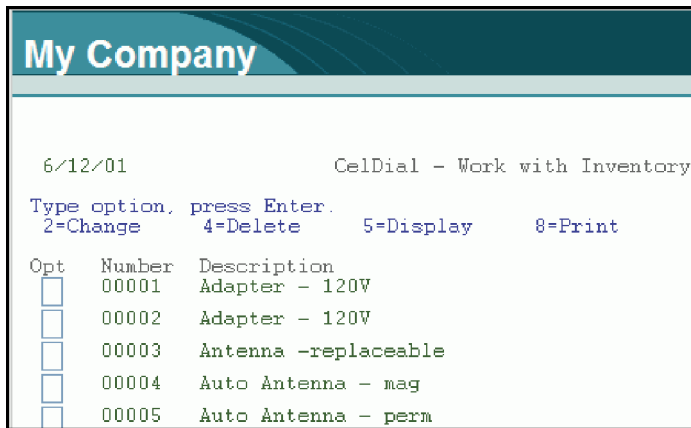


You will notice that the startCeldial screen capture is selected by default. Click Next.

17. The Actions page opens.



18. De-select the **Apply a transformation** check box, and select the **Play a macro** check box. By default, the invMacro macro is selected.
19. Click **Finish** to create the screen customization. The new screen customization is displayed under the Screen Customizations folder for the linkhatsXX project.
20. You will now test the macro in the WebSphere test environment. Double-click **Project Settings** under the **linkhatsXX** project to display the linkhatsXX Settings editor.
21. Click the **Launch on WebSphere Application Server** link under the Testing header.
The HATS project is published to the WebSphere test environment, and a Web browser opens in the editor area of the workbench.
22. Complete the sign-on process in the web browser.
23. Once the i5/OS Main Menu displays, enter GO CELDIAL on the command line, and press Enter to open the customer inquiry (CelDial) application. The HATS macro takes control, bypassing the CelDial menu, and then displays the Work with Inventory menu.



You have created and tested a HATS macro to perform an application command.

Lesson checkpoint

You learned the following:

- About HATS macros
- How to create and record a HATS macro
- How to use a HATS macro to perform an application command

Module summary

In this lesson you learned how to create, run and test a HATS project in the workbench.

Lessons learned

By completing this module, you learned about the following concepts and tasks:

- About using a HATS project to Web-enable a 5250 application
- How to create, run and test a HATS project in the WebSphere test environment
- How to record a macro and use it in a HATS project

Assessment

- What debugging feature does a HATS project allow when being launched?
- Describe the purpose of the WebSphere test environment.
- What are some of the uses of a HATS macro?

Linking a HATS/WebFacing enabled project with a HATS project

In this module, you will link the HATS/WebFacing enabled project with the HATS project created earlier. You will also run and test the linked application in the WebSphere test environment.

After you have created a HATS/WebFacing enabled project and a HATS project, you can link them using the Linked HATS/WebFacing Project wizard. While it does not matter which order the projects are created in, both projects must exist in the workspace before you can begin the linking process.

Learning objectives

After completing the lessons in this module, you will be able to perform these tasks:

- Link the HATS project to a HATS/WebFacing enabled project
- Run and test the newly-linked project

Time required

This module should take approximately 10 minutes to complete.

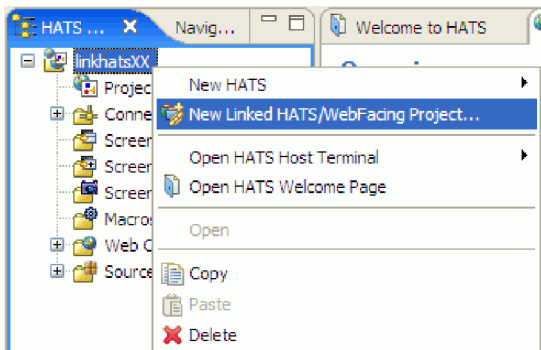
Linking the HATS/WebFacing enabled and HATS projects

Using the Linked HATS/WebFacing Project wizard, you will link your HATS/WebFacing enabled project with your HATS project.

By linking the HATS/WebFacing enabled project and HATS project, you can combine applications with converted source and unconverted source. This seamless interoperability allows you to leverage the advantages of both WebFacing and HATS.

Before a screen is displayed in the Web browser, the linked project is scanned for the converted source files. If these files are present, the WebFaced page is shown. Otherwise, the HATS data stream transformation is displayed.

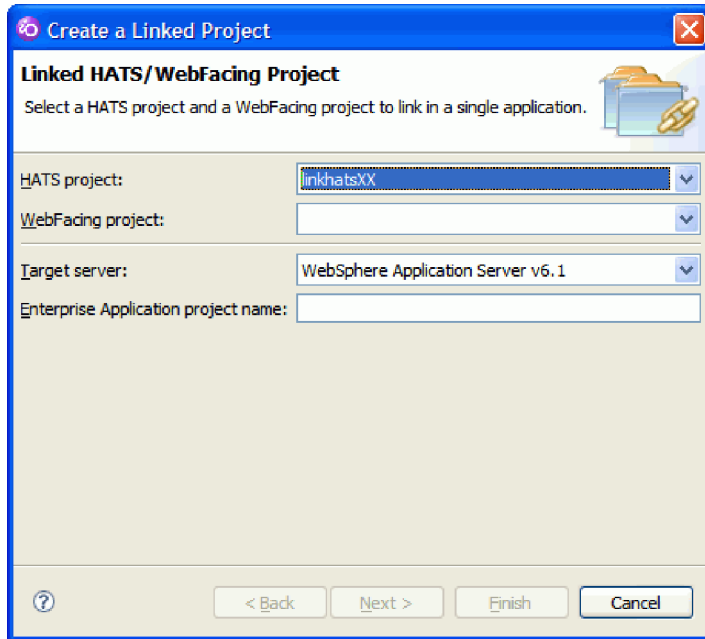
1. In the HATS Projects view, right-click the **linkhatsXX** project.
2. From the pop-up menu, select **New Linked HATS/WebFacing Project**.



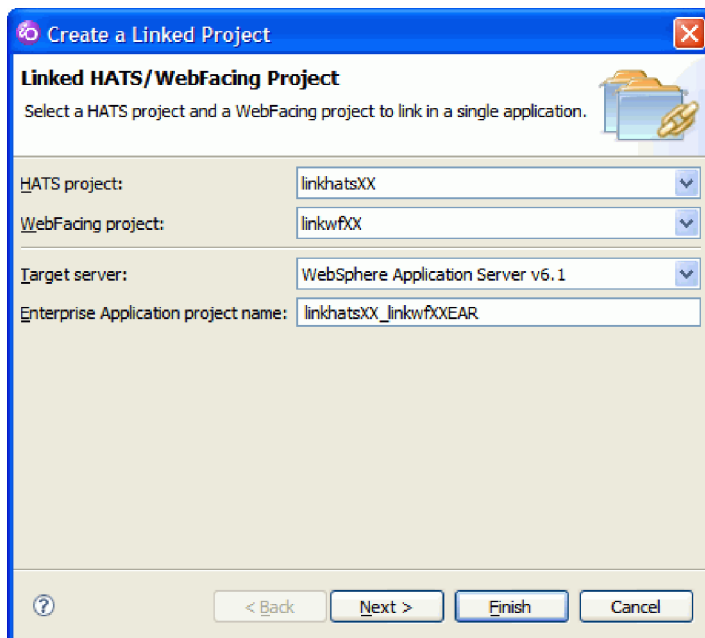
Tip: If you are in the WebFacing perspective, there is an alternative method of creating a new Linked HATS/WebFacing Project. Simply right-click the HATS/WebFacing project and select **Link With > HATS Project**.

The Linked HATS/WebFacing Project wizard opens, with your HATS project name specified by default. Only HATS Web projects with a connection type of 5250 or 5250W are displayed in this list.

Note: If you select a HATS project with a 5250 connection type, the connection type for the linked HATS/WebFacing project will still be 5250W.

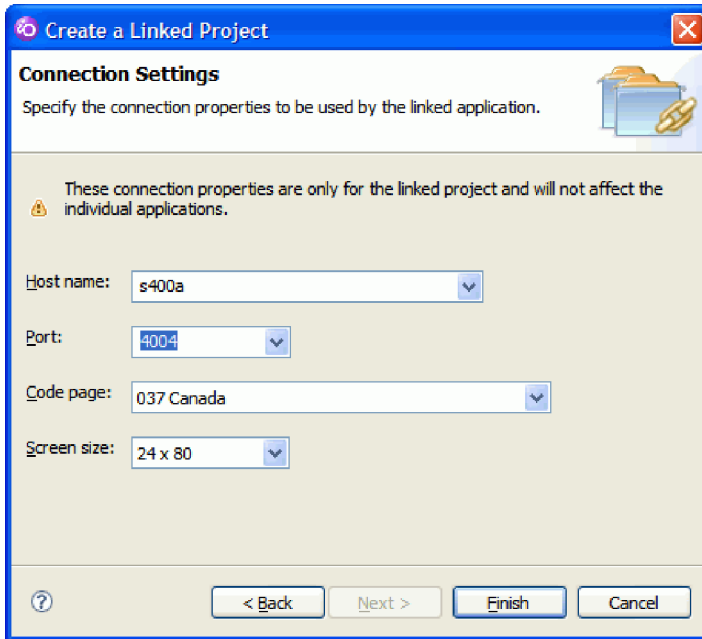


3. In the **WebFacing project** list, select the **linkwfXX** project. Only HATS/WebFacing enabled projects are displayed in this list.



By default, your linked project name will be the HATS project name, followed by an underscore and your HATS/WebFacing enabled project name, followed by EAR. Because the HATS project is named linkhatsXX and the HATS/WebFacing enabled project is linkwfXX, the **Enterprise Application project name** will be linkhatsXX_linkwfXXEAR.

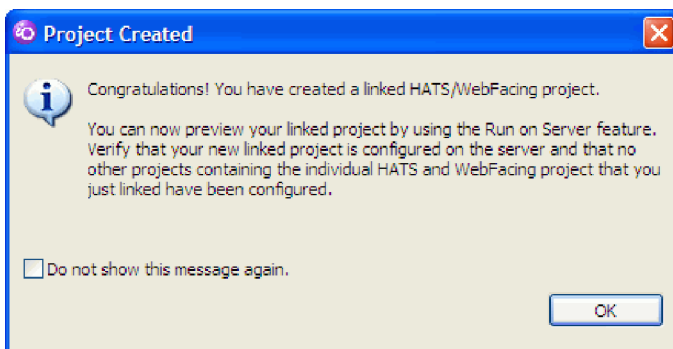
4. Click **Next**.



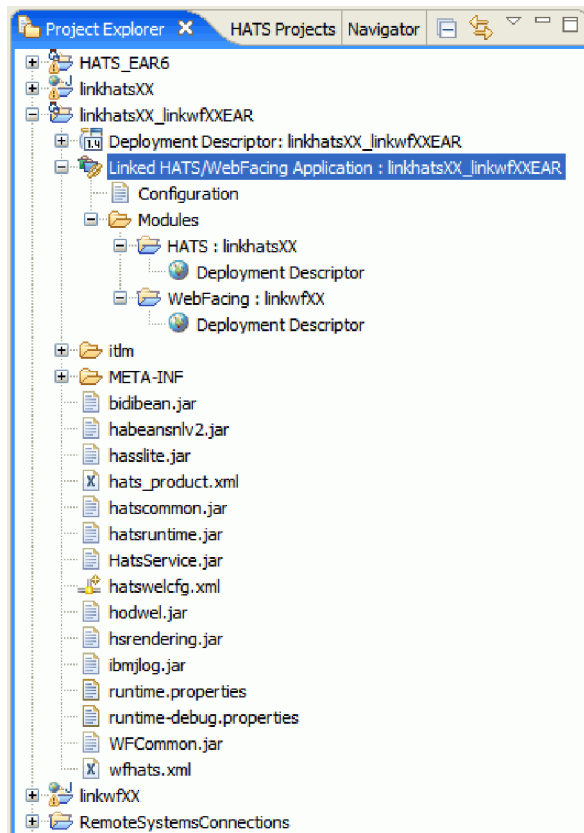
5. The Connection Properties page allows you to specify your host name, port, code page, and screen size. Because you started the wizard by right-clicking the HATS project, the connection settings of the HATS project will be selected by default. Accept the default connection settings and click **Finish** to create the linked HATS/WebFacing project.

Tip: If the connection information in the WebFacing project is different from the HATS project, you can select a host name and port from values entered for either project. (If you enter the wizard by right-clicking a WebFacing project, the WebFacing project values will be selected by default as the host name and port.) You can also provide new values for the host name and port. Code page and Screen size lists contain all valid options, but are pre-set to the HATS project settings. For more information on the settings on this wizard page, press F1 while the page is displayed.

6. When the HATS/WebFacing linking process is complete, the **Project Created** message box opens, offering information on testing and deploying the newly linked application. Read the message and click **OK** to continue.



In the Project Explorer view, you will also notice that the `linkhatsXX_linkwfXXEAR` project has been created.



You have successfully linked the HATS/WebFacing enabled and HATS projects.

Lesson checkpoint

You learned these things:

- About linking a HATS/WebFacing enabled project and a HATS project
- How to create a linked HATS/WebFacing project
- How to specify project and connection settings for a linked HATS/WebFacing project

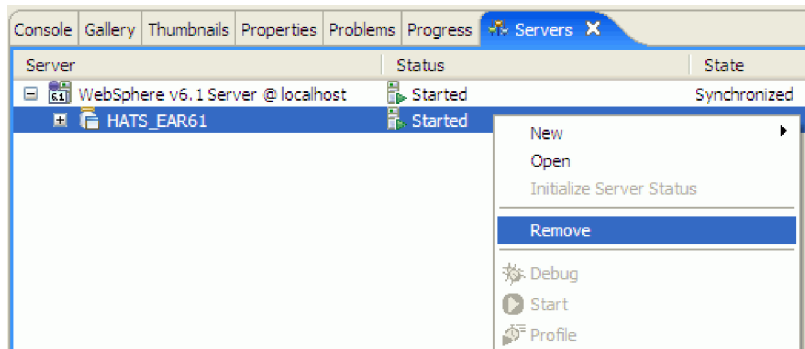
Running and testing the linked application

In this lesson, you will run and test the linked HATS/WebFacing project in the WebSphere test environment on your workstation.

As you did earlier with your HATS project, you will publish your linked project to the test environment and run it there. Before you can publish the linked HATS/WebFacing project, you must remove the standalone HATS project from the WebSphere test environment. This is because you cannot have two copies of the HATS project on the server using the same context root.

To publish, run and test the newly linked project:

1. In the Servers view, expand the **WebSphere v6.1 Server @ localhost** server; right-click the **HATS_EAR61** entry; and click **Remove**.

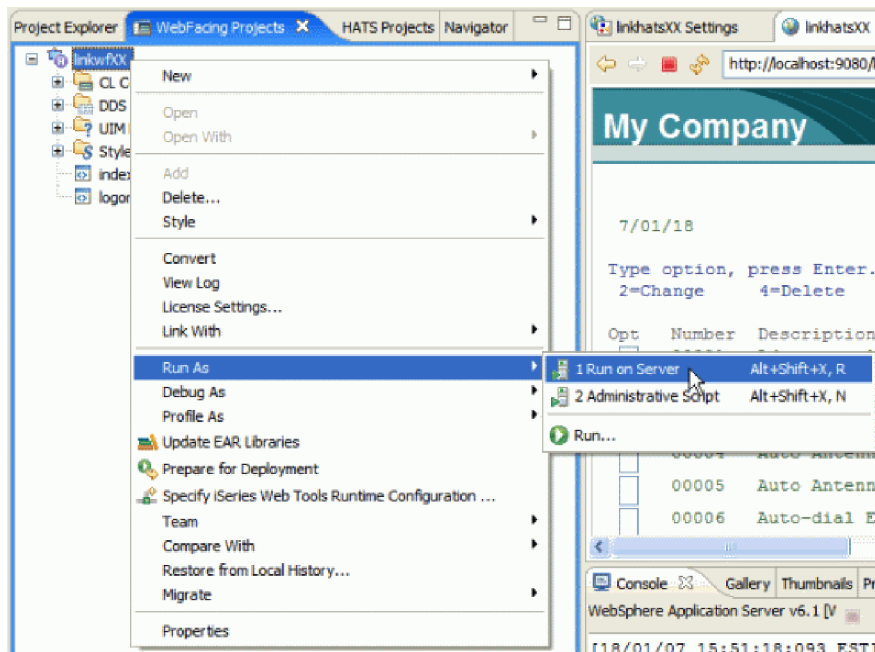


2. When prompted, confirm that you want to remove the project from the server by clicking OK.
3. Activate the WebFacing Projects view by selecting **Window > Show View > Other > WebFacing > WebFacing Projects.**)

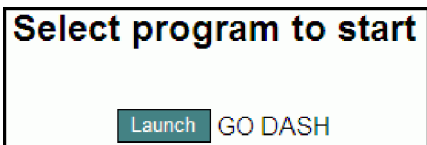
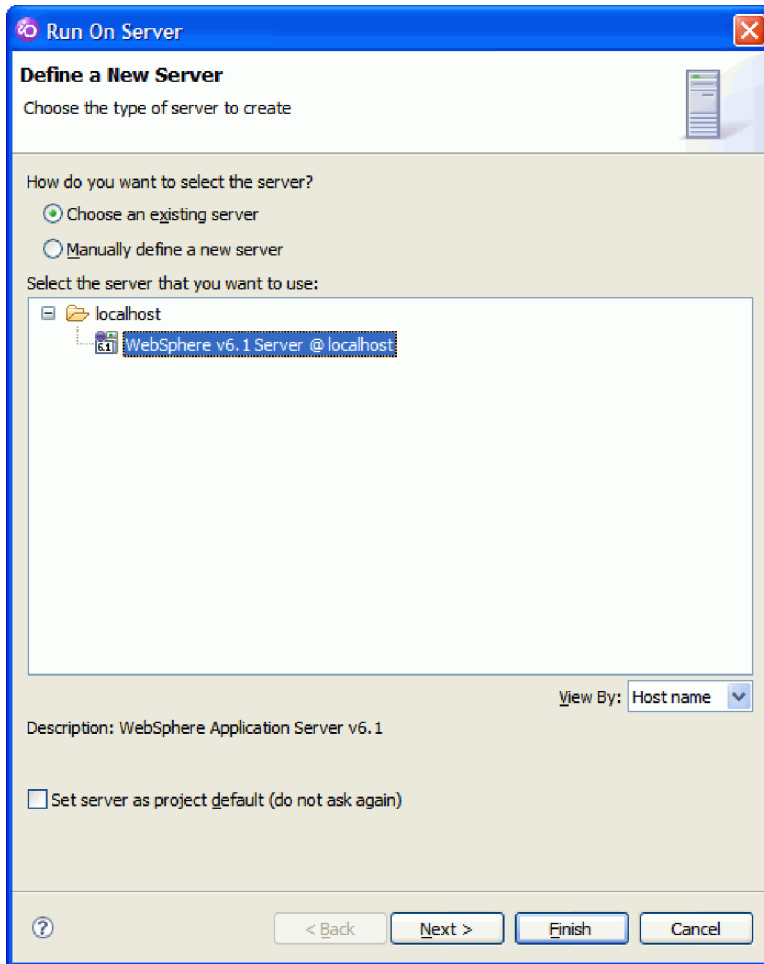
Important: Before you test your application, verify that the WebFacing server is running on your the server. Verify that jobs QQFWFSVR and QQFVTSVR are running. This is done by using the WRKACTJOB JOB(QQF*) command in a 5250 session.

If these jobs are not running then you need to start the WebFacing server. On a CL command line, type `strtcpsvr *webfacing`.

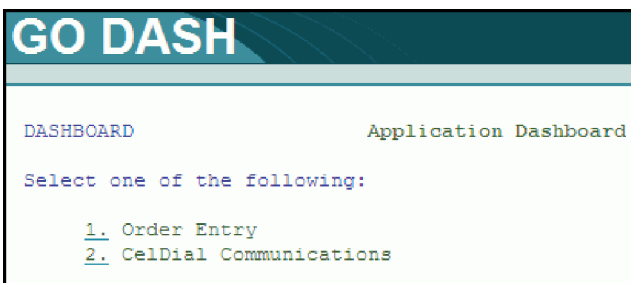
4. In the WebFacing Projects view, right-click the `linkwfxX` project and select **Run As > Run on Server.**



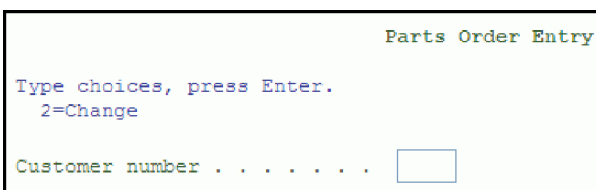
5. The Run on Server window opens. Select the **WebSphere v6.1 Server**; select the **Set server as project default (do not ask again)** check box; and click **Finish**. The linked application is deployed to the WebSphere test environment, and a Web browser opens in the editor area.



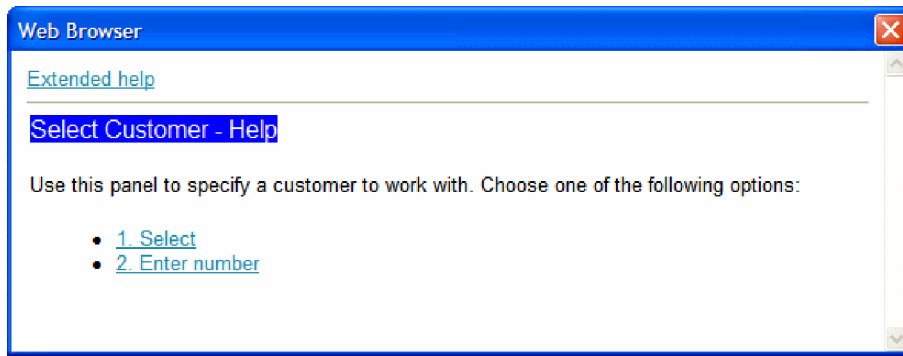
- In the Web browser view, click the **Launch** button to load the application menu. The Dashboard menu appears, allowing you to access the order entry and customer inquiry (CelDial) applications.



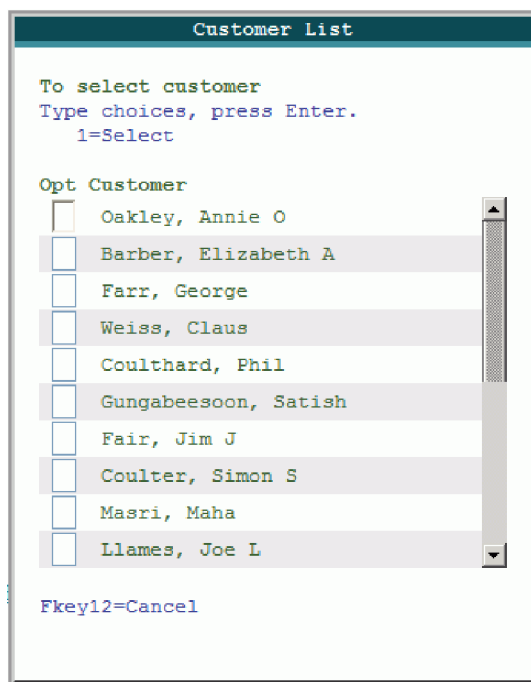
- Click the number 1. beside Order Entry to open the order entry application. The Parts Order Entry screen opens.



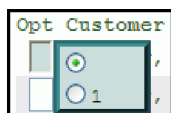
Tip: Pressing the F1 key on this screen will display one of the UIM Help panels that was converted as part of your project.



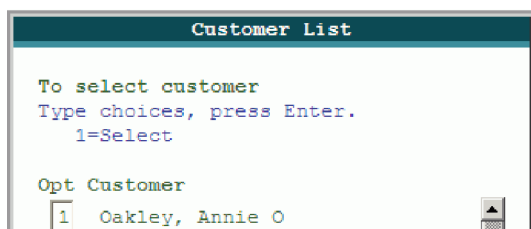
8. Click the **Prompt** link to display the Customer List dialog.



You will notice that this application has been transformed by the WebFacing tool to a Web-based application. You will see common user interfaces that are present in Web-based applications. For example, hovering over the Opt field next to a customer name displays a drop-down selection box:



9. Select a customer from the list by hovering over the text box to the left of their name, and clicking the 1 radio button. (You can also select a customer by typing 1 in the text box.) Press Enter to confirm the selection.



The customer information appears in the Parts Order Entry screen:

```

Parts Order Entry

Type choices, press Enter.
 2=Change

Customer number . . . . . 0001      Order number . . . . . :
Customer name . . . . . : Oakley, Annie O
Address . . . . . : 00001 Ave. ABC
                  Bldg 00001
City . . . . . : Des_Moines_      IO  07891-2345

Opt Part      Description                               Qty


  
```

- Click **Prompt** to display a list of available parts. The Select Part dialog opens.

```

Select Part

Type choices, press Enter.
 1=Select

Opt Part      Description                               Qty
 000001 WEBSPHERE REDBOOK                          78
 000002 Radio_Controlled_Plane                    1,398
 000003 Change_Machine                             14
 000004 Baseball_Tickets                           397
 000005 Twelve_Num_Two_Pencils                       765
 000006 Over_Under_Shotgun                           65
 000007 Feel_Good_Vitamins                          345
 000008 Cross_Country_Ski_Set                         31
 000009 Rubber_Baby_Buggy_Wheel                    345
 000010 ITSO REDBOOK SG24-2152                       294
  
```

- Select a part from the list by typing 1 in the box to the left of the part number, and then press Enter. The part number and description appear on the first line of the order.
- Press Enter again to add the part to the order.

```

Opt Part      Description                               Qty

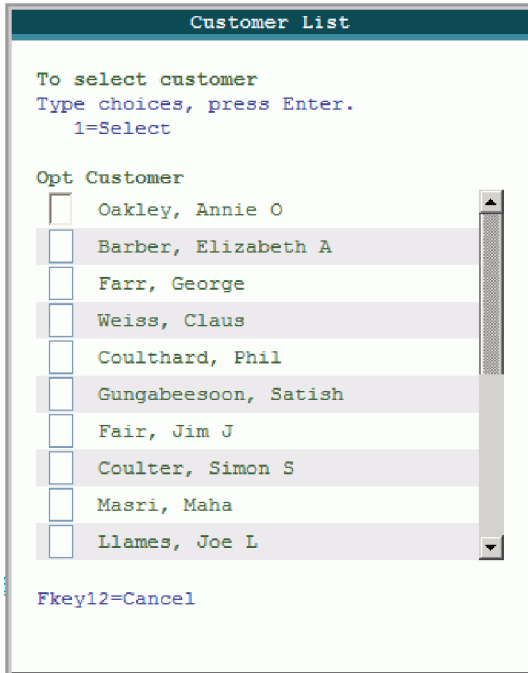

 000004 Baseball_Tickets                           397
  
```

- You can continue to add parts to the order in the same way. Once you have added all the parts you want, click **Accept Order** to complete the order process. To return to the Application Dashboard menu, click **Exit**.

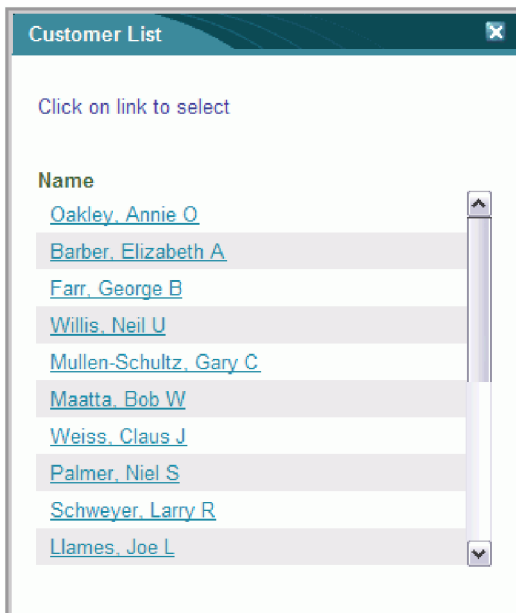
Note: Your HATS/WebFacing enabled project also has many unique customization features available to it, such as Web Settings, which you can use to further enhance your application. Refer to Help topic Customizing your WebFacing applications and the tutorial **Web-enable a 5250 application using the IBM WebFacing Tool** for more details.

As an example, see the following images to see the difference customizing an application can make.

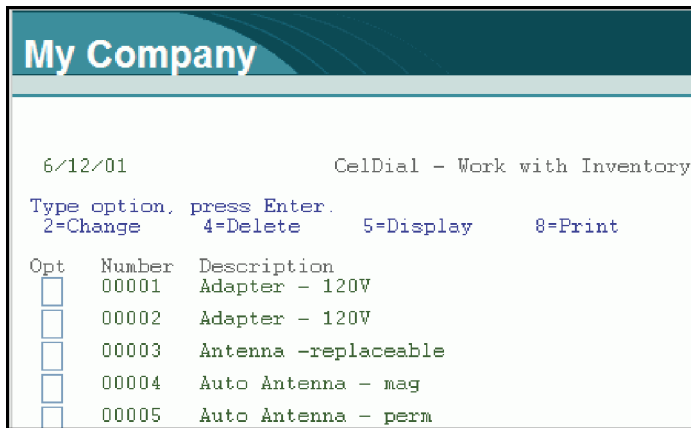
Before customization:



After customization:



14. Now, you will view the customer inquiry (CelDial) application, which is dynamically transformed by HATS. Click 2. to the left of CelDial Communications to open the application.
15. The CelDial menu opens. Click 2. to open the Work with Inventory screen.



While both the WebFacing and HATS applications use the same visual style, several items on this screen indicate that the application is being transformed by HATS. For example, the "GO DASH" title is changed to "My Company", and the links at the bottom of the application include the command key labels (such as F3=Exit and F6=Add a part.) When you customize your linked application, you will change these elements to provide a consistent appearance across the entire application.

For details on navigating the application, read the instructions provided in "Running and testing the HATS application" on page 20.

You have run and tested the newly linked HATS/WebFacing project in the WebSphere test environment.

Lesson checkpoint

In this lesson, you learned the following:

- How to publish, run and test a linked HATS/WebFacing project in the WebSphere test environment

Module summary

In this lesson, you learned how to integrate your existing HATS/WebFacing enabled project with the HATS project by creating a linked HATS/WebFacing project. The linked HATS/WebFacing project allows access to applications that have been transformed by the WebFacing Tool, as well as 5250 applications that have not been converted. You also learned how to publish and run the linked HATS/WebFacing project on the WebSphere Application Server.

Lessons learned

By completing this module, you learned about the following concepts and tasks:

- How to link a HATS/WebFacing enabled project with a HATS project
- How to publish, run and test the linked HATS/WebFacing project

Assessment

- Which two types of projects are required to create a linked HATS/WebFacing project?
- What is the purpose of creating a linked HATS/WebFacing project?

Working with the linked application

In this module, you will work with the linked project. You will change settings and properties for both the HATS/WebFacing enabled project, and the HATS project.

In order to edit the visual style for a linked HATS/WebFacing project, you must locate the template and Cascading Style Sheet (CSS) files associated with both the HATS/WebFacing enabled project and the HATS project.

The Project Explorer view allows you to manage the resources and files associated with each of the projects in the workspace, including linked HATS/WebFacing projects. The Project Explorer view also displays which HATS and HATS/WebFacing projects are contained in a linked HATS/WebFacing project.

Learning objectives

After completing the lessons in this module, you will be able to perform these tasks:

- Find and work with a linked HATS/WebFacing application, using the Project Explorer
- View and edit settings and properties for a linked project

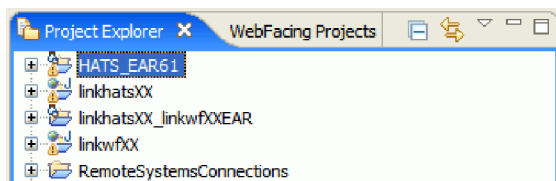
Time required

This module should take approximately 10 minutes to complete.

Working with the linked project using the Project Explorer

In this lesson, you will locate and work with the newly linked HATS/WebFacing project using the Project Explorer view.

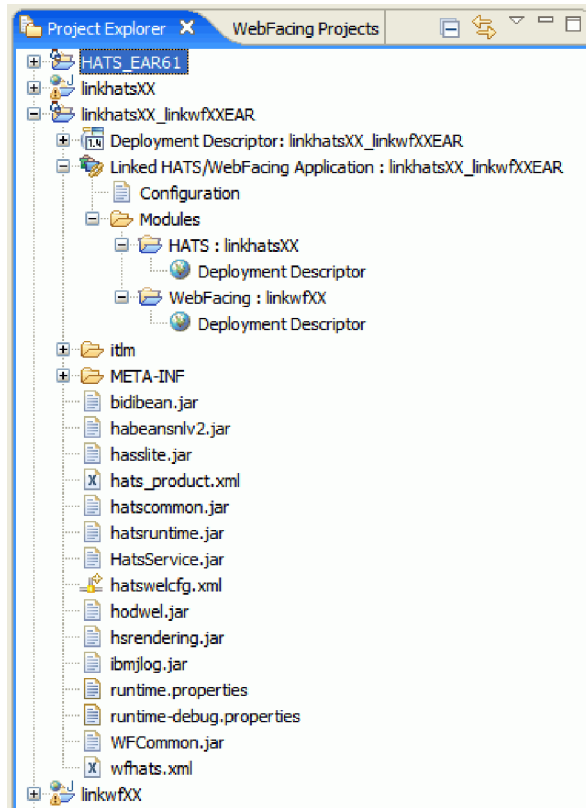
The Project Explorer view provides access to resources in the workspace, for example files and folders, organized by their functions and features. You can easily identify items such as project configuration and deployment descriptor files, without searching through the file system.



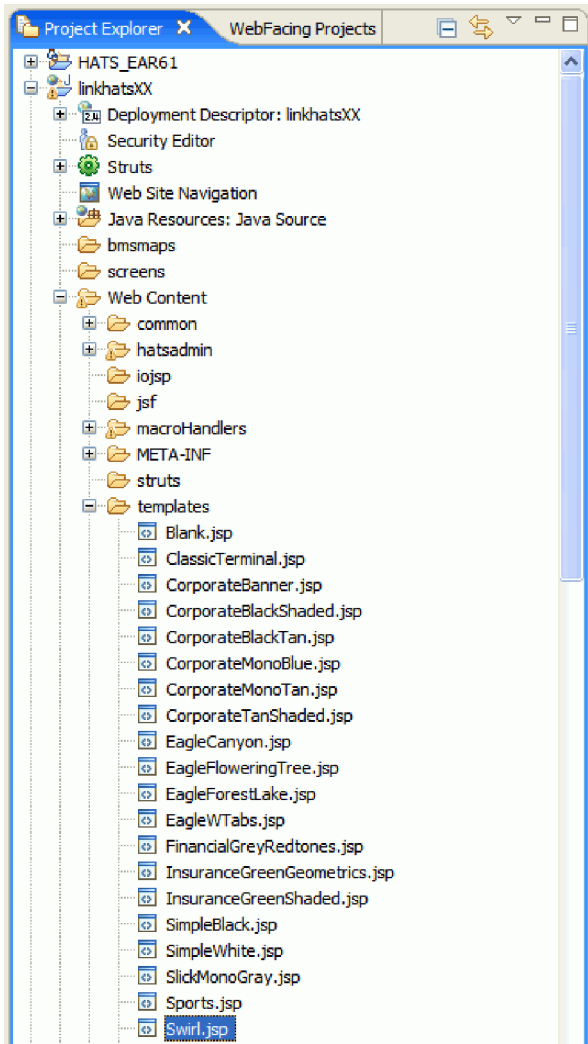
To use the Project Explorer view to work with the linked HATS/WebFacing project that you just created:

1. In the Host Access Transformation Services perspective, locate the Project Explorer view. Expand the **linkhatsXX_linkwfxXEAR** project. (If the Project Explorer view is not visible, click **Window > Show View > Other > General > Project Explorer**)

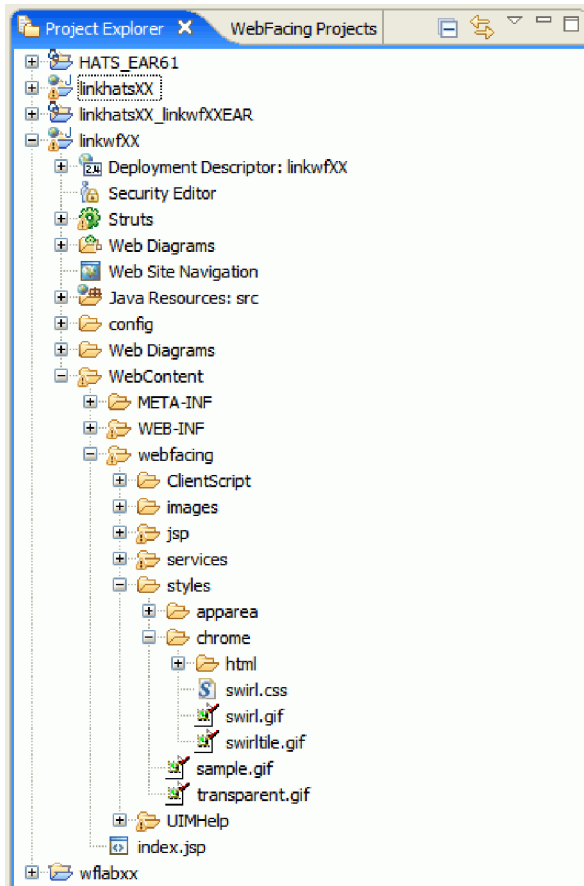
The tree expands to show the contents of the linked HATS/WebFacing project. This folder contains several configuration files:



- wfhats.xml contains interoperability settings for the WebFacing and HATS runtime.
2. Expand the HATS project, **linkhatsXX**, to view its resources. Locate the **Swirl.jsp** file in the Web Content\templates folder, which defines the default layout and style for the host screen transformation.



3. Expand the HATS/WebFacing project, **linkwfXX**, to view its resources. Locate the **swirl.css** file in the `WebContent\webfacing\styles\chrome` folder, which defines the default layout and style for the area surrounding the HATS/WebFacing application.



The **apparea.css** file, in the WebContent\webfacing\styles\apparea folder, sets the default appearance for the application user interface.

Note: WebFacing and HATS files can also be viewed from their respective WebFacing Projects and HATS Projects views.

You have expanded the project to view its resources, and located files using the Project Explorer.

Lesson checkpoint

You learned these things:

- About the Project Explorer view
- How to navigate projects using the Project Explorer view

Changing project settings and properties

In this lesson, you will modify project settings and properties for the linked HATS/WebFacing project.

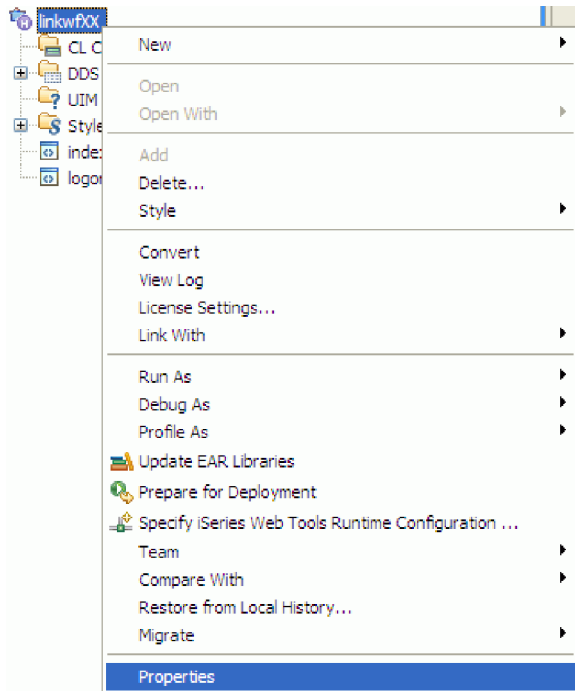
Project settings for your linked HATS/WebFacing project are defined by three components: the HATS/WebFacing enabled project settings, the HATS project settings, and the connection settings for the linked HATS/WebFacing project. To edit connection settings for the linked HATS/WebFacing project, you must edit the wfhats.xml configuration file in the linked project folder.

You can modify settings for HATS/WebFacing enabled projects using the Properties dialog box. The Properties dialog box allows you to modify project-specific settings without editing configuration files. To modify HATS project properties, you use the Project Settings editor.

In this lesson, you will change settings for the HATS/WebFacing enabled project and HATS project. You will also learn about the wfhats.xml file, which contains settings for the linked HATS/WebFacing project.

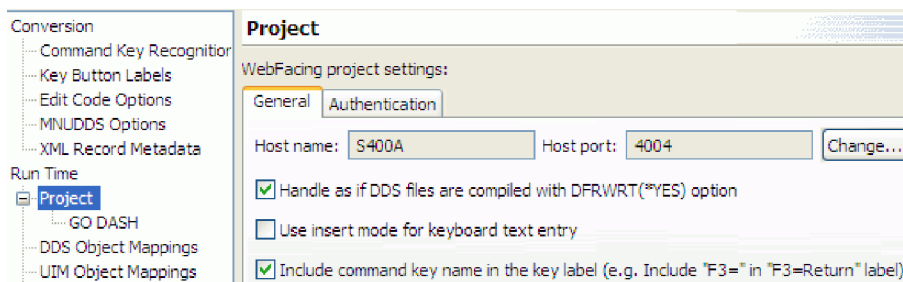
To change project properties:

1. First, you will modify project settings for the HATS/WebFacing project. Activate the WebFacing Projects view. (If you do not see the WebFacing Projects view in your current perspective, activate it by clicking **Window > Show View > Other > WebFacing > WebFacing Projects**.)
2. Right-click the linkwfx project, and select **Properties**.



The Properties dialog box opens. This dialog box allows you to change settings for the project, such as display attributes and authentication settings. You will change the command key display setting, so that command keys are displayed beside their corresponding labels.

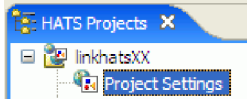
Note: Any properties that you specified during the linking process take priority over settings made in the Properties dialog. For example, if you change the Host name or Host port values, the host and port specified in the wfhats.xml configuration file will still be used at runtime.



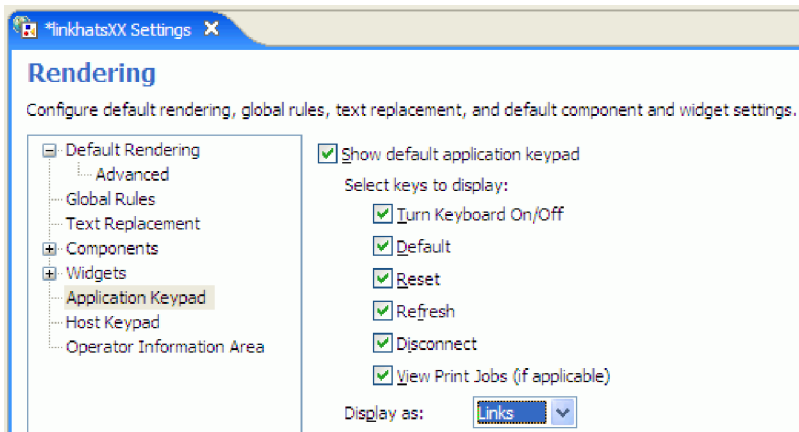
3. Select the **Include command key name in the key label** check box.
4. Under the **Project** category, click **GO DASH** to display the CL command settings.
5. Change the **Command label** to My Application.



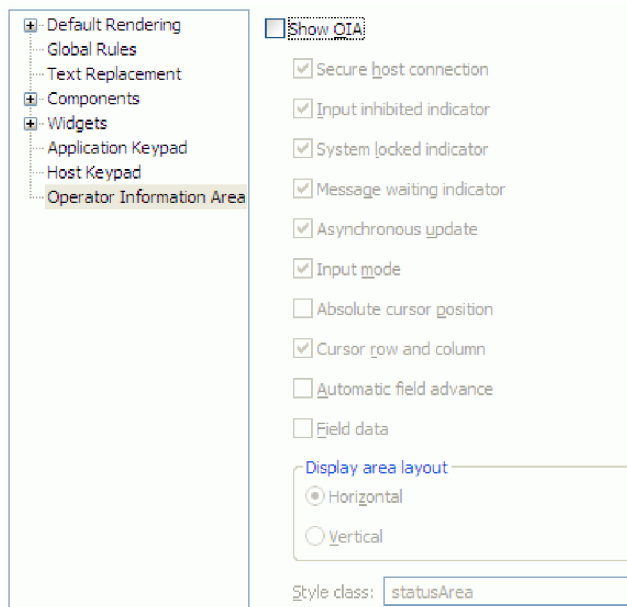
6. Click **OK** to save the project properties.
7. Now, you will modify the rendering settings to display the Application Keypad as links. In the HATS Projects view, expand the **linkhatsXX** project, and double-click the **Project Settings** icon.



8. Click the **Rendering** tab at the bottom of the editor area.
9. Select **Application Keypad** from the left panel.
10. In the **Display as** list, select **Links** to display the application keypad using text links.

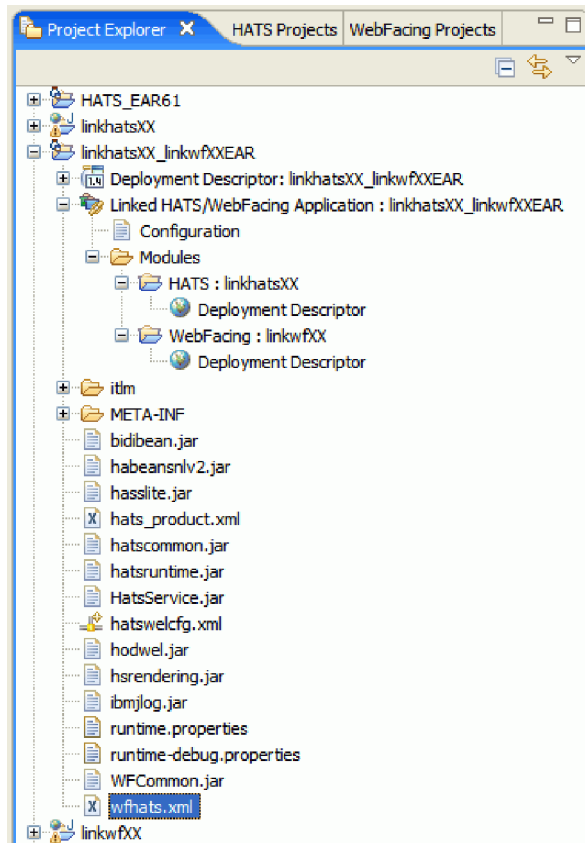


11. You will now remove the Operator Information Area (OIA) from the HATS application. In the left panel, select **Operator Information Area**, and then de-select the **Show OIA** check box.



12. Click **File > Save** to save the project rendering settings.

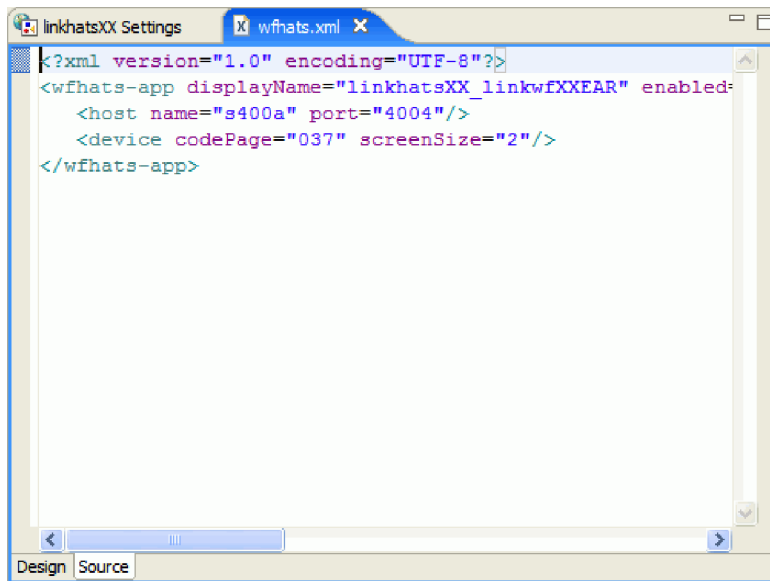
13. You will now view the **wfhats.xml** file to display settings for the linked HATS/WebFacing project. In the Project Explorer view, expand the **linkhatsXX_linkwfXXEAR** project, and double-click the **wfhats.xml** file.



The XML editor opens in the editor area.

Note: You can also double click the 'Configuration' node under 'Linked HATS/WebFacing Application: linkhatsXX_linkwfXXEAR' to open **wfhats.xml**.

14. Click the **Source** tab at the bottom of the editor area to display the contents of the **wfhats.xml** file.



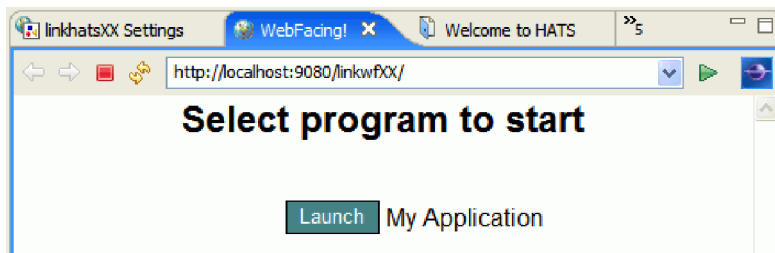
The **wfhats.xml** file contains settings for the linked HATS/WebFacing project, such as host name, code page, and project locations. For example, if you changed the context root of your HATS or HATS/WebFacing enabled project after the linking process, you would need to edit **wfhats.xml** to reference the renamed context root.

Since you have not changed any settings in your workspace that would affect the linked project, you can close the XML editor.

- Now, you will launch the application in the WebSphere test environment. In the WebFacing Projects view, right-click the **linkwfxX** project, and select **Run As > Run on Server**.

Note: If you did not select the **Set server as the project default (do not ask again)** check box on the Run on Server dialog when you selected the server in “Running and testing the linked application” on page 34, ensure that you select the same server on the dialog now. For example, if you had previously selected WebSphere V6.1 Server, ensure that you select that server now.

The linked HATS/WebFacing application opens.



- Click the **Launch** button beside the My Application command to initialize the Application Dashboard menu. You will notice that the dashboard menu now displays command key labels beside each of the actions, and the application title is now “My Application”.

[F3=Exit](#)

[F12=Cancel](#)

- Click **2.** beside the CelDial Communications text to launch the HATS customer inquiry application. The CelDial Communications application opens. You will notice that the Operator Information Area is not shown, and the Application Keypad is displayed as a set of links:

[F3=Exit](#)

[F4=Prompt](#)

[F9=Retrieve](#)

[F12=Cancel](#)

[F13=Information Assistant](#)

[F16=System main menu](#)

[Reset](#) [Default](#) [Refresh](#) [Disconnect](#) [Turn Keyboard Off](#)

You have successfully modified project settings for the HATS/WebFacing enabled and HATS projects, and learned about settings for the linked HATS/WebFacing project.

Lesson checkpoint

You learned these things:

- How to activate the WebFacing Projects view in the workbench
- How to access the Properties dialog box for a HATS/WebFacing enabled project
- How to modify settings for a HATS project using the Project Settings editor
- About properties and settings available for a linked HATS/WebFacing project

Module summary

In this module you learned about working with a linked HATS/WebFacing project. You used the Project Explorer to navigate and locate resources, and edited the project properties.

Lessons learned

By completing this module, you learned about the following concepts and tasks:

- About the Project Explorer view
- How to navigate a linked HATS/WebFacing project using the Project Explorer
- How to edit project properties using the WebFacing Projects and HATS Projects views

Assessment

- What does the Project Explorer view display?
- How do you access the HATS/WebFacing enabled project Properties dialog box?
- Name a HATS project setting.

Customizing the linked application for a unified style

In this module, you will modify style sheets and display properties for the HATS/WebFacing enabled project and the HATS project. The goal of this module is to customize the style of components created using the HATS and WebFacing Tool while maintaining a unified look across the application.

You will edit the Cascading Style Sheet (CSS) for the order entry application, which was converted by the WebFacing Tool, and the Java™ Server Page (JSP) for the customer inquiry application, which was transformed using HATS.

Learning objectives

After completing the lessons in this module, you will be able to perform these tasks:

- Modify style attributes for a WebFacing application
- Modify style attributes for a HATS application
- Display and test the new style customizations

Time required

This module should take approximately 10 minutes to complete.

Modifying WebFacing style attributes

In this lesson, you will modify style attributes for the HATS/WebFacing enabled component in the linked HATS/WebFacing project.

The goal of this lesson is to make changes to the user interface for the HATS/WebFacing enabled application. You will customize the title font for the HATS/WebFacing enabled application. You can refresh the application and immediately preview your changes.

HATS/WebFacing enabled projects implement their style and layout using three key files:

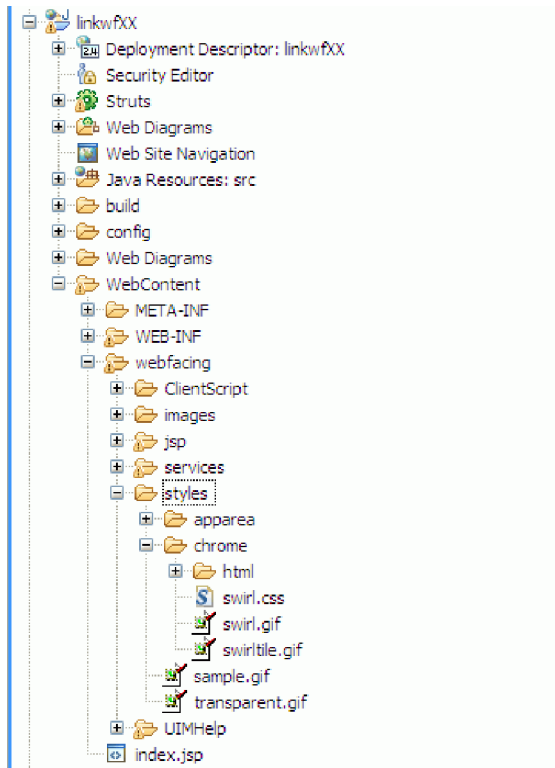
- A Cascading Style Sheet (CSS) file in the WebContent\webfacing\styles\chrome folder provides styling information for the page template. Because you chose the "swirl" style when you created the HATS/WebFacing enabled project, you will see swirl.css in this folder.
- apparea.css in the WebContent\webfacing\styles\apparea folder sets the style information for the application area.
- PageBuilder.jsp in the WebContent\webfacing\styles\chrome\html folder defines the HTML layout of the WebFacing application.

Additionally, the CmdKeys.jsp file in the WebContent\webfacing\styles\chrome\html folder determines how command key labels and buttons are displayed.

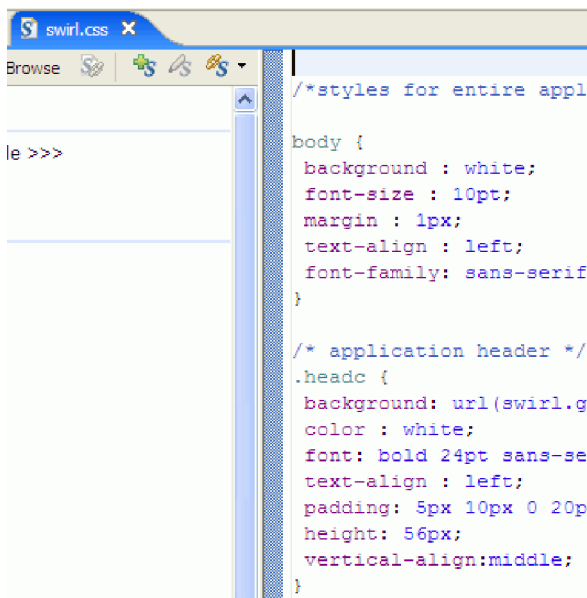
You will modify the `swirl.css` file while maintaining the unified style of the HATS/WebFacing enabled order entry application and the HATS customer inquiry (CelDial) application.

To modify WebFacing style attributes:

1. In the Project Explorer view, under the `linkwfXX` project, expand the **WebContent** > **webfacing** > **styles** > **chrome** folder to reveal the `swirl.css` file.



2. Double-click the `swirl.css` file. The cascading style sheet editor opens.



3. Click the **color:** definition inside the `.headc` style class. The Preview panel displays a preview of the selected style.

Style of .headc

4. Change the color: style definition to:
`color: yellow;`
5. Change the font: style definition to:
`font: bold 24pt tahoma;`
The Preview panel will change to reflect your new style settings:

Style of .headc

6. Save the `swirl.css` file by clicking **File > Save**, and then close the cascading style sheet editor.

You have modified WebFacing style attributes for your HATS/WebFacing enabled project. Next, you will modify style attributes for the HATS project.

Lesson checkpoint

You learned these things:

- About styles for HATS/WebFacing enabled projects
- How to access and modify a style sheet for a HATS/WebFacing enabled project, using the Project Explorer

Modifying HATS style attributes

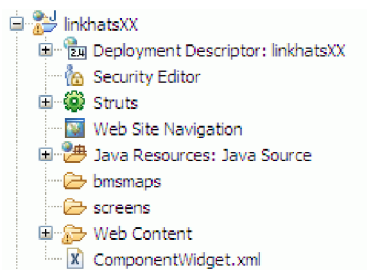
In this lesson, you will modify style attributes for the HATS component of the linked project.

You will modify the layout and style for the HATS application by editing the `Swirl.jsp` file. The `Swirl.jsp` file contains style definitions and layout information for the Swirl template.

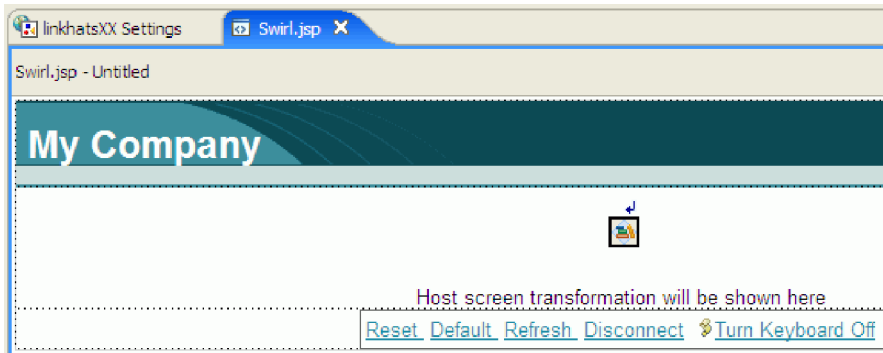
As you have already done for the HATS/WebFacing enabled project, you will modify these files so that the HATS application will have the same look and feel.

To modify HATS style attributes:

1. In the Project Explorer view, expand the **linkhatsXX** project.



2. Expand the **Web Content** folder.
3. Expand the **templates** folder.
4. Double-click the **Swirl.jsp** template. The Page Designer appears in the editor area.



5. Click the **Source** tab at the bottom of the editor window. The source code for the template appears.
6. Locate the `<style>` element in the document. In the `.COMPANYTITLE` style definition, change the `color:` style definition to:

```
color: yellow;
```

7. Delete the `font-size:` and `font-weight:` style definitions.

8. Add a new font style definition:

```
font: bold 24pt tahoma;
```

9. Locate the `` element in the document. The full tag is:

```
<span CLASS="COMPANYTITLE"> &nbsp;&nbsp;&nbsp;My Company </span>
```

Replace the text so that it reads:

```
<span CLASS="COMPANYTITLE"> &nbsp;&nbsp;&nbsp;My Application </span>
```

```
<td valign="middle" height="56" background=" ../common/imag
<span CLASS="COMPANYTITLE"> &nbsp;&nbsp;&nbsp;My Application </span>
</td>
```

This will change the HATS application title to the same text as the HATS/WebFacing enabled application title.

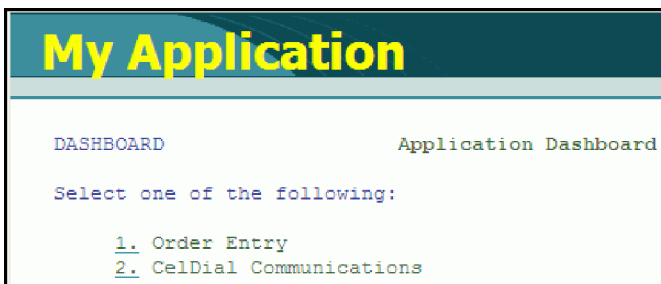
10. Save the **Swirl.jsp** template by clicking **File > Save**.
11. Click the **Design** tab at the bottom of the editor area. You will see a preview of the modified style.



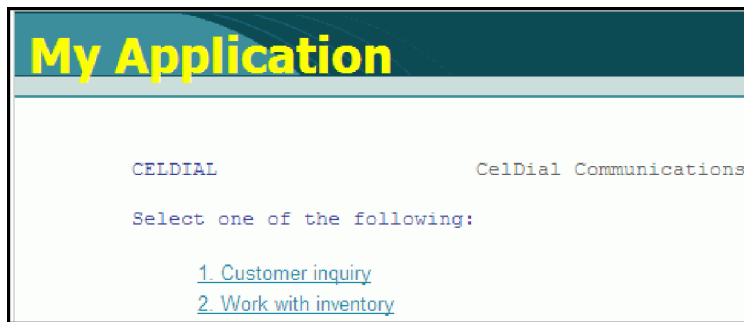
12. Now, you can test the style modifications in the WebSphere test environment. As before, activate the WebFacing Projects view, right-click the **linkwfxX** project, and select **Run As > Run on Server**.

Note: If you did not select the **Set server as the project default (do not ask again)** check box on the Run on Server dialog when you selected the server in “Running and testing the linked application” on page 34, ensure that you select the same server on the dialog now. For example, if you had previously selected WebSphere V6.1 Server, ensure that you select that server now.

The linked HATS/WebFacing project loads in the internal Web browser, and you can see the updated font style for the application title.



- Click **2.** beside CelDial Communications to open the HATS customer inquiry application. The CelDial Communications menu opens, and HATS displays the modified styles:



The linked HATS/WebFacing application has been customized while maintaining a consistent appearance.

You have modified HATS style attributes for your linked HATS/WebFacing project. You also tested the changes in the WebSphere test environment.

Module summary

In this module, you learned about customizing a linked HATS/WebFacing project while maintaining a unified look and feel to both the WebFacing component and the HATS component. You also learned how to use the Project Explorer to locate and edit the cascading style sheet (CSS) and template files that define the visual appearance for the project. Finally, you learned how to test your new style modifications in the WebSphere test environment.

Lessons learned

By completing this module, you learned about the following concepts and tasks:

- About cascading style sheets and page templates
- Which files are involved in customizing a linked HATS/WebFacing project
- How to modify WebFacing and HATS components while maintaining a unified visual appearance

Assessment

- Which two types of files define the visual appearance of a linked HATS/WebFacing project?
- Which view allows you to navigate to the styles defined for a HATS component?

Creating a new HATS/WebFacing enabled project based on an existing WebFacing project

In this module, you'll learn how to create a HATS/WebFacing enabled project that is based on an existing WebFacing project, to avoid the task of re-specifying the base WebFacing project properties.

There are two methods to convert an existing WebFacing project with all its individual selections into a HATS/WebFacing enabled project:

1. Make a copy of an original WebFacing project and convert it into a HATS/WebFacing enabled project.
2. Convert an existing WebFacing project into a HATS/WebFacing enabled project.

Both of these steps will be described by lessons in this module.

Learning objectives

After completing the lessons in this module you will know how to do the following:

- Create a HATS/WebFacing enabled project based on an existing WebFacing project

Time required

This module should take approximately 10 minutes to complete.

Prerequisites

To complete this module, you must have a WebFacing project that you want to convert to a HATS/WebFacing enabled project. For details on how to create a WebFacing project, see the [Web-enable a 5250 application using the IBM WebFacing Tool tutorial](#).

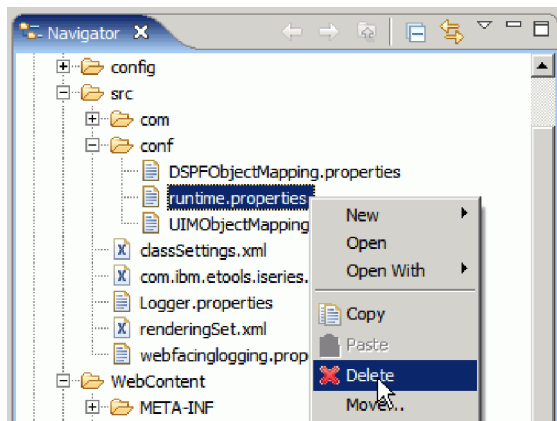
Converting an existing WebFacing project into a HATS/WebFacing enabled project

In this lesson, you'll learn how to convert an existing WebFacing project into a HATS/WebFacing enabled project.

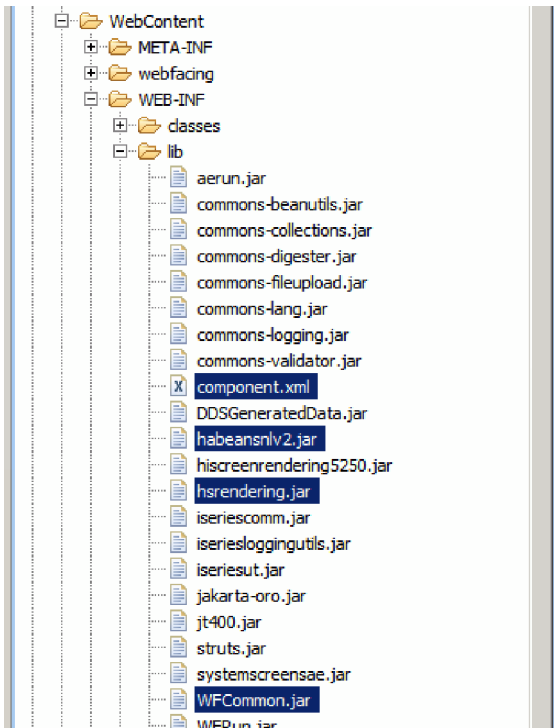
The easiest method for creating a HATS/WebFacing enabled project from an existing WebFacing project is to convert the existing WebFacing project into a HATS/WebFacing enabled project. This is done by simply deleting several files from the WebFacing project. The only disadvantage is that after the conversion, you can no longer use this project as a stand alone WebFacing project; It has to be used as a HATS/WebFacing enabled project.

To convert the existing project into a HATS/WebFacing enabled project:

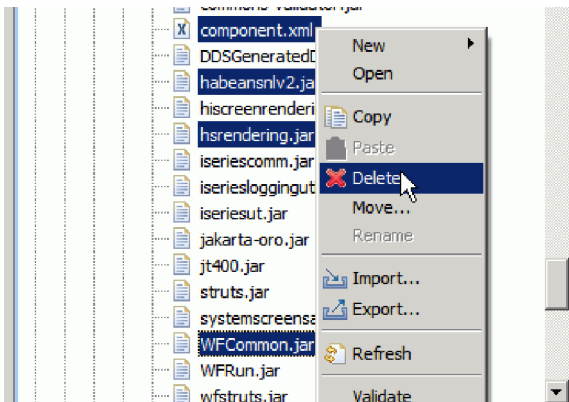
1. Expand the src\conf and WebContent\WEB-INF\lib folders.
2. In the src\conf, right-click the runtime.properties file, and select **Delete**.



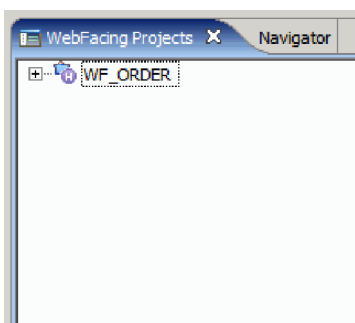
3. In the WebContent\WEB-INF\lib folder, hold the Ctrl key and select component.xml, habeansnlv2.jar, hsrendering.jar and WFCCommon.jar.



4. Right-click one of the files, and select **Delete**.



5. Switch to the WebFacing Projects view.
6. Press the F5 key to refresh the view. You will notice that the project is now a HATS/WebFacing enabled project, denoted by the distinctive icon in the WebFacing Projects view.



You have converted an existing WebFacing project into a HATS/WebFacing enabled project and it can now be linked to a HATS project.

Converting a copy of the original WebFacing project into a HATS/WebFacing enabled project

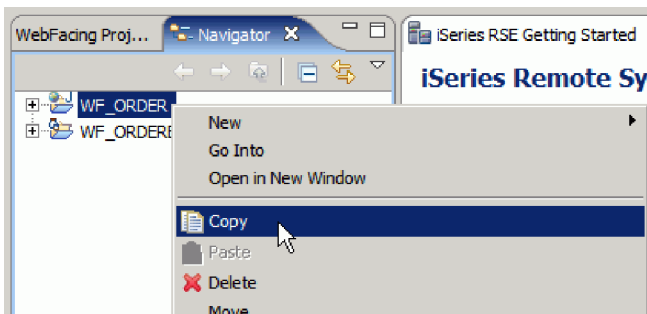
In this lesson, you'll make a copy of your original WebFacing project, and then convert this copy into a HATS/WebFacing enabled project.

This method of creating a HATS/WebFacing enabled project allows you to preserve the original WebFacing project.

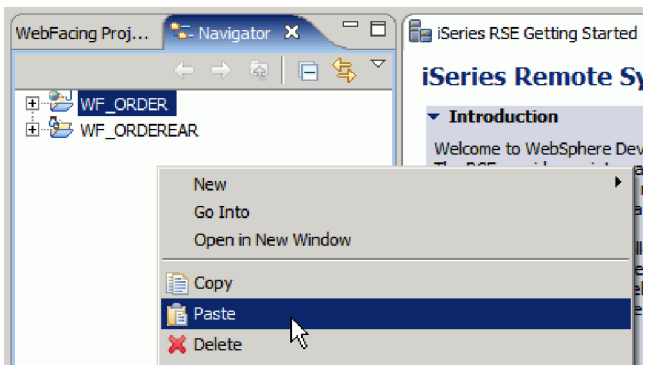
Important: To complete this lesson, you must have a WebFacing project that you want to convert into a HATS/WebFacing enabled project. For details on how to create a WebFacing project, see the **Web-enable a 5250 application using the IBM WebFacing Tool** tutorial. For the purposes of this lesson, we'll refer to the name of the WebFacing project as **WF_ORDER**.

To convert a copy of your original WebFacing project into a HATS/WebFacing enabled project:

1. If the Navigator view is not visible, in the WebFacing perspective, click the Navigator tab.
2. Right-click your existing WebFacing project, **WF_ORDER**, and select **Copy**.

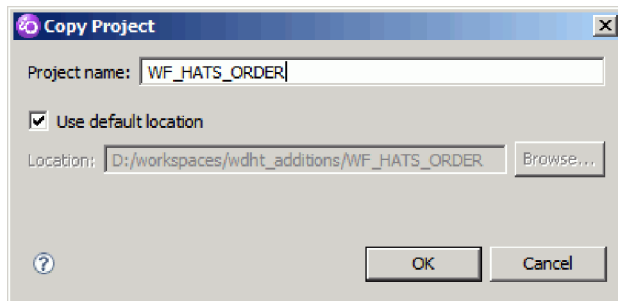


3. Right-click inside the Navigator view and select **Paste**.

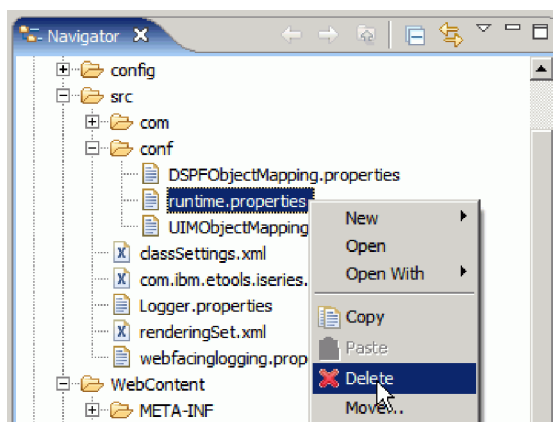


The Copy Project window opens, prompting for a new Project name.

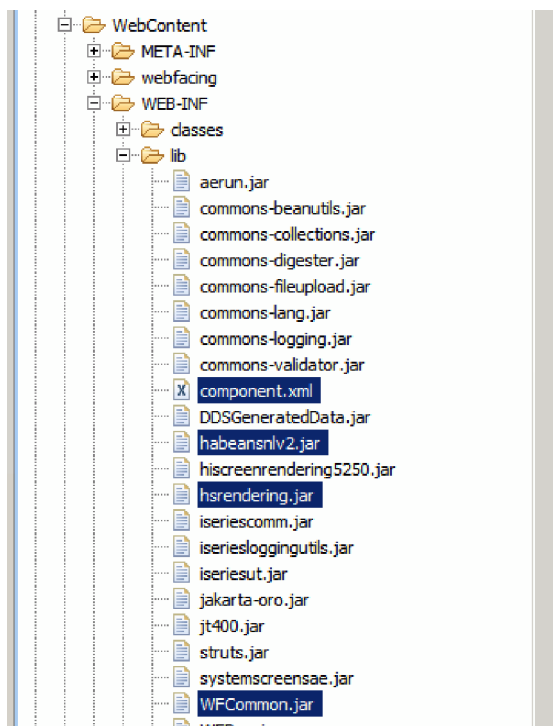
4. Type **WF_HATS_ORDER** as the new Project name.



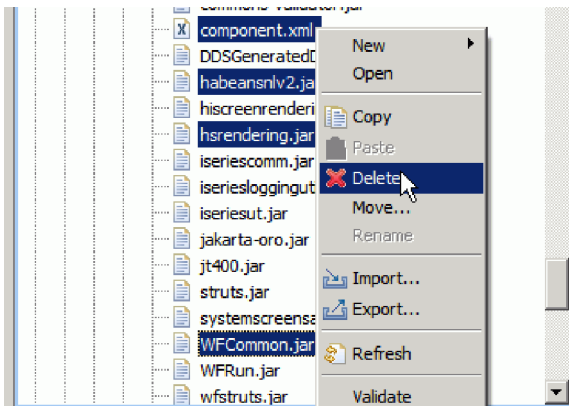
5. Click **OK**. A copy of the WebFacing project is created with the name WF_HATS_ORDER. To begin converting the WebFacing project to a HATS/WebFacing enabled project, several files must be deleted from the WF_HATS_ORDER project.
6. Expand the src\conf and WebContent\WEB-INF\lib folders in the WF_HATS_ORDER project.
7. Inside the src\conf folder, right-click runtime.properties, and select **Delete**.



8. In the WebContent\WEB-INF\lib folder, hold down the Ctrl key and select component.xml, habeanslv2.jar, hsrendering.jar and WFCommon.jar.

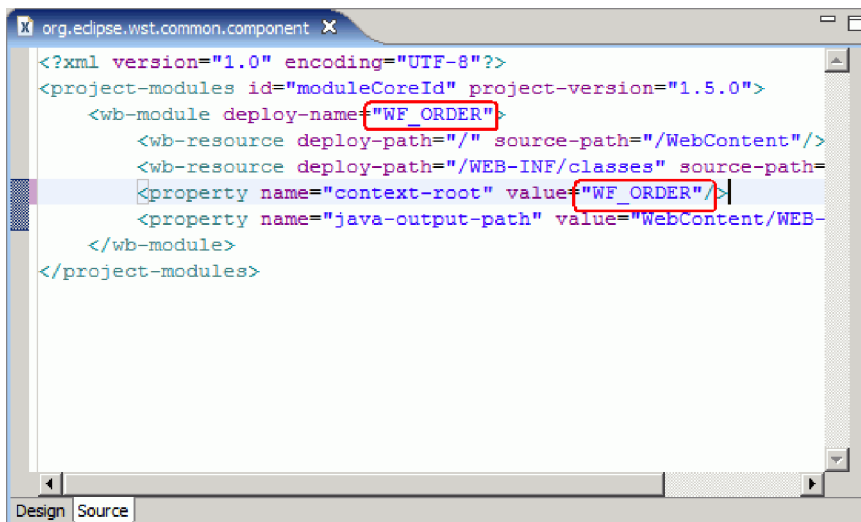


9. Right-click one of the files, and select **Delete**.

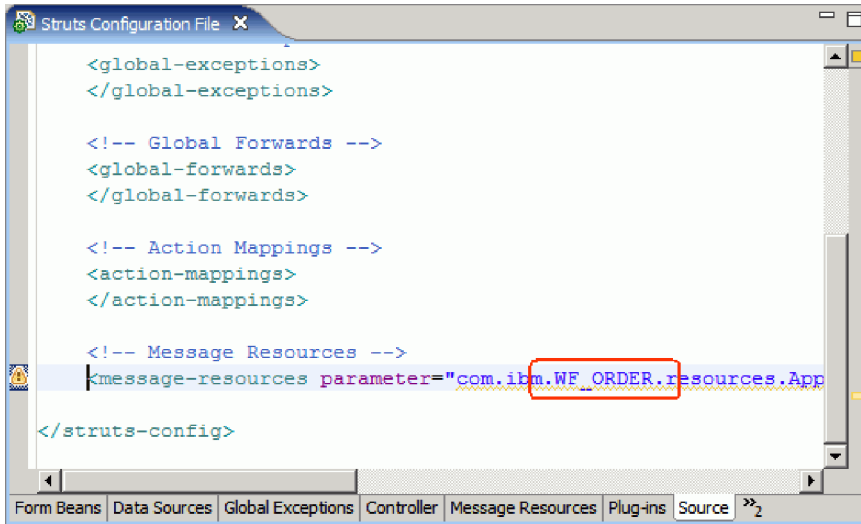


Next, you have to replace occurrences of the original WebFacing project name, WF_ORDER, with the new HATS/WebFacing enabled project name, WF_HATS_ORDER.

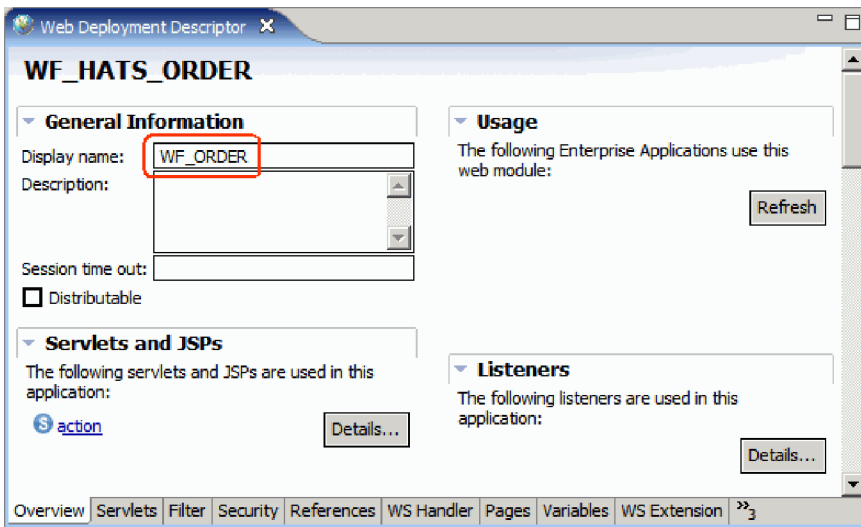
10. In the Navigator view, under the WF_HATS_ORDER project, open the following files and change all instances of the string WF_ORDER to WF_HATS_ORDER:
- .setting/org.eclipse.wst.common.component (2 matches as deploy name and context root value)



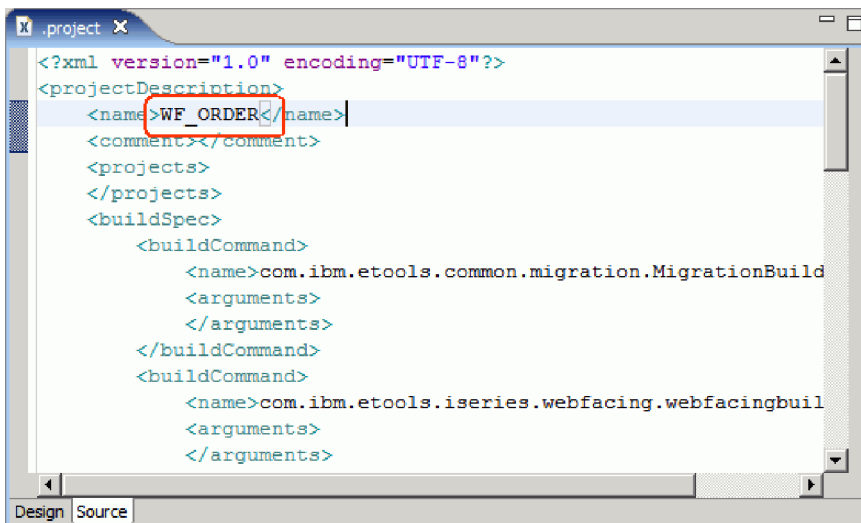
- WebContent/WEB-INF/struts-config.xml (1 match as message resource parameter)



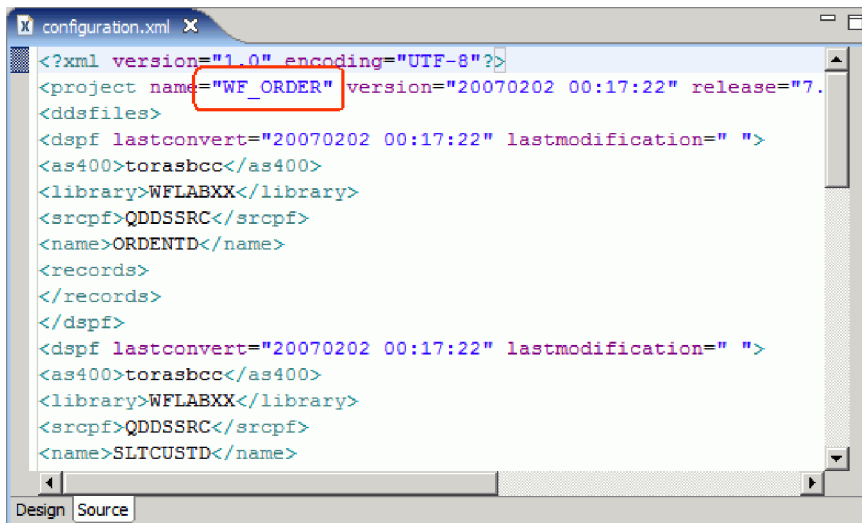
c. WebContent/WEB-INF/web_xml (1 match as display name)



d. .project (1 match as name)

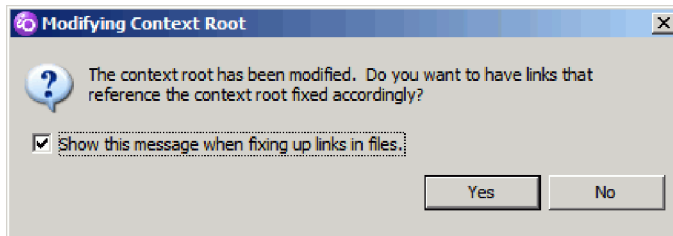


- e. config/configuration.xml (1 match as project name)



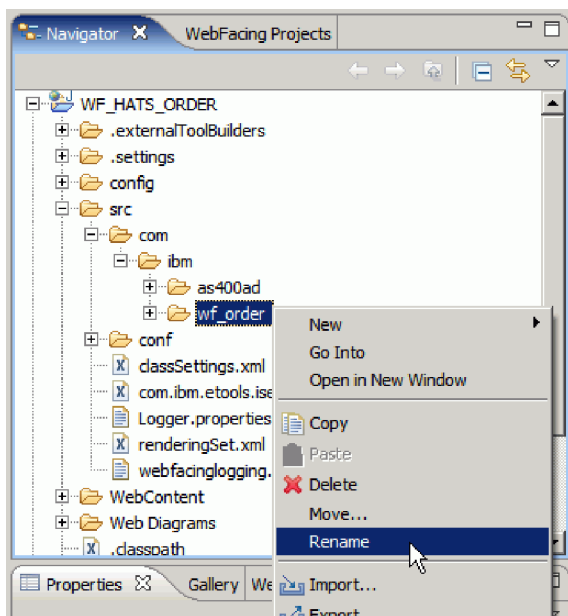
```
<?xml version="1.0" encoding="UTF-8"?>
<project name="WF_ORDER" version="20070202 00:17:22" release="7.
<ddsfiles>
<dspf lastconvert="20070202 00:17:22" lastmodification=" ">
<as400>torasbcc</as400>
<library>WFLABXX</library>
<srcpf>QDDSSRC</srcpf>
<name>ORDENTID</name>
<records>
</records>
</dspf>
<dspf lastconvert="20070202 00:17:22" lastmodification=" ">
<as400>torasbcc</as400>
<library>WFLABXX</library>
<srcpf>QDDSSRC</srcpf>
<name>SLTCUSTD</name>
```

11. When the Modifying Context Root dialog appears, click **Yes** to fix all links.



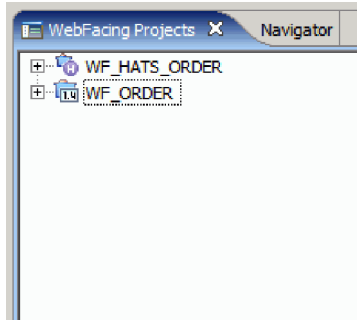
You now have to rename one directory to reflect the new project name.

12. In the Navigator view, expand the src\com\ibm folder.
13. Right-click the wf_order folder and select **Rename**.



14. Change the name of the folder to wf_hats_order.
15. Switch to the WebFacing Projects view.

16. Press the F5 key to refresh the view. You will notice that the project is now a HATS/WebFacing enabled project, denoted by the distinctive icon in the WebFacing Projects view.



You have converted a copy of an existing WebFacing project into a HATS/WebFacing enabled project and it can now be linked to a HATS project.

Module summary

In this module, you learned how to take an existing WebFacing project, and convert it into a HATS/WebFacing enabled project using two different methods.

Lessons learned

By completing this module, you learned about the following concepts and tasks:

- How to convert a copy of a WebFacing project into a HATS/WebFacing project
- How to convert a WebFacing project directly into a HATS/WebFacing project

Tutorial summary: Create a Linked WebFacing and HATS application

You have completed the process of linking a HATS/WebFacing enabled project and a HATS project to form a single, linked application. You also learned how to customize the projects to provide a consistent look and feel across the WebFacing and HATS components.

Lessons learned

By completing this tutorial, you learned about the following key concepts:

- Creating a linked WebFacing and HATS application by combining a WebFacing project with a HATS project
- Working with linked application resources and settings, using the Project Explorer
- Modifying templates and style sheets while maintaining a consistent look and feel to an entire application

Related links

The following Web sites and help topics may be useful in locating additional information:

Considerations for Linked HATS/WebFacing Applications

Introducing Host Access Transformation Services

Introducing the IBM WebFacing Tool

Customizing your WebFacing Applications

 [Rational Host Access Transformation Services](#)

 [The IBM WebFacing Tool](#)

Chapter 2. Notices

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