Using the IBM WebFacing Tool with FLGHT400

by Michael J. Sandberg

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Abstract

The objective of this lab is to work with an existing 5250 application and use the IBM® WebFacing Tool and IBM WebSphere® Developer Studio Client to create a browser-based user interface, and then run this application as an e-business application. At the end of the lab, you will know how to use the IBM WebFacing Tool. The lab will guide you through most of the steps involved in the Web-facing process.

Introduction

The IBM WebFacing Tool creates Web front ends to IBM iSeries[™] system applications that use data description specifications (DDS) for their green-screen transactions. You choose a Web style for the new graphical interface, generate a set of JavaServer[™] Pages (JSPs[™]) and XML files that interact with the program logic, and then easily test your application in the test environment provided by the IBM WebSphere Studio Workbench. When you are ready to deploy the application, you can generate standard Java 2 Enterprise Edition (J2EE[™]) Web archive (WAR) and enterprise archive (EAR) files that you can install on a WebSphere Application Server.

The steps in this lab are:

- 1. Reviewing the Flight Reservation System application components
- 2. Creating a Web-faced application
- 3. Testing the Web-faced application
- 4. Packaging, installing, and testing the Web-faced application on the iSeries system
- 5. Customizing the Web-faced application
- 6. Creating a Web-faced portlet
- 7. Testing the Web-faced portlet

Prerequisites

The following information will be listed on the lab information sheet:

- <team_number>: Team number of your choice
- <iSeries_Server>: Your iSeries system host name
- <iSeries_userid>: Your iSeries user ID
- <iSeries_password>: Your iSeries password

The list of systems and software required to complete the lab are:

- An iSeries system and a PC
- The FLGHT400 library restored and on the iSeries library list

Note: The code is available from the *iSeries Developer Roadmap: End-to-end* demo Web site listed in the **Resources** section.

- WebSphere Development Studio Client Version 6 installed on the PC
- Optional: WebSphere Application Server installed and configured on the iSeries system

Tips: Here are a few things to keep in mind as you are completing this lab:

- 1. WebSphere Development Studio Client is a dynamic development environment capable of a large amount of user customization. Because of this, the screen captures in this document might not exactly match what you see when following the steps in this lab.
- 2. In the lab instructions, substitute your <team_number> for xx.
- 3. All exercises depend on the availability of specific software on your PC and iSeries system.

Reviewing the Flight Reservation System application components

In this section, you will review the Flight Reservation System application components through opening a perspective, defining a connection, and reviewing the system components.

Part 1: Starting WebSphere Development Studio Client

Follow these steps:

- Go to Start > All Programs > IBM Rational > IBM WebSphere Development Studio Client Advanced Edition for iSeries V6.0 > WebSphere Development Studio Client Advanced Edition for iSeries.
- In the Workspace Launcher window (Figure 1), enter c:\teamxx (Where xx is your <team_number>) in the workspace field and press OK. (Make sure that Use this as a default and do not ask again is not checked.)

Workspace Launcher	
Select a workspace IBM Rational Software Development Platform stores your Select the workspace directory to use for this session.	projects in a directory called a workspace.
Workspace: C:\teamxx	Browse
Use this as the default and do not ask again	
	OK Cancel

Figure 1: Select a workspace

You will see a **Welcome** page (Figure 2) if you have not used WebSphere Development Studio Client before.

3. Click X to close the Welcome page.



Part 2: Opening the Remote System Explorer perspective

Open the **Remote System Explorer** perspective by following these steps:

1. Click the **Open perspective** icon on the right-hand side or go to **Window > Open Perspective**.

Remote System Explorer - IBM Rational Software Development	t Platform	
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Figure 3: Select Perspective

- 2. Select Other.
- 3. In the Select Perspective window, select Remote System Explorer (Figure 3) and click OK.

Part 3: Defining a connection to the iSeries system

Now you will define a connection to the iSeries system by following these steps:

- 1. Click the + sign next to iSeries under New connection in the Remote Systems view.
- 2. If WebSphere Development Studio Client has not been used before, you will see the **name personal profile** screen.
- 3. Enter teamxx as the profile (Where xx is your <team_number>) and press Next.
- 4. On the **Define connection information** screen, enter the host name as **<iSeries_Server>** (where <iSeries_Server> is your iSeries system).

5. Enter the connection name (Figure 4) as **<iSeries_Server> connection** and click **Finish**.

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	-
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<u>H</u> ost name:	<pre><iseries_server> (where <iseries_server> is your iSeries Server)</iseries_server></iseries_server></pre>
Description:	
Verify host nam	ie
	< Back Next > Einish Cancel

Figure 4: Enter connection name

- 6. You will see a new connection defined in the **Remote Systems** view.
- 7. Right-click iSeries Objects under New Connection.
- 8. Select Connect (Figure 5) to connect to the iSeries system.

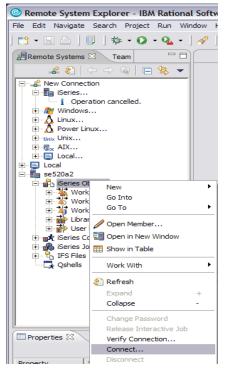


Figure 5: Remote Systems view

- 9. In the Enter password window, type your <iSeries_userid> and <iSeries_password>.
- 10. Select the Save user ID and Save password check boxes and click OK.
- 11. After a successful connection, you will see a green arrow next to the iSeries connection as well as the iSeries objects and other subsystems.

Part 4: Reviewing the Flight Reservation System application components

In this section of the lab, you will review the application components by following these steps:

- 1. Click the + sign next to iSeries Objects.
- 2. Click the + sign next to Library list.
- 3. Right-click Library list and select Add Library List Entry (Figure 6).

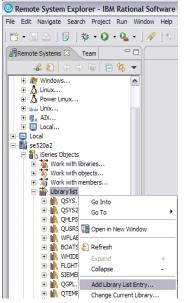


Figure 6: Add Library List Entry screen

- 4. In the Add Library List Entry window, enter FLGHT400 and click OK.
- 5. Click the + sign next to FLGHT400.
- 6. You will see RPG, CL program objects from FLGHT400.

7. Scroll down and click the + sign next to the **QDDSSRCD** *file pf-src object (Figure 7) to see DSPF source members used in the Flight Reservation System application.



Figure 7: DSPF source members

- 8. You can double-click any member to open it in the editor view. **Note**: Do not make any changes or save the changes.
- 9. Scroll down and click the + sign next to **QMNUSRC** *file pf-src to see the MNUDDS source members used in the Flight Reservation System application.

Creating the Web-faced application

In this section, you will create the Web-faced application by opening, creating, and converting the project.

Part 1: Opening the IBM WebFacing Tool perspective

Follow these steps to open the IBM WebFacing Tool perspective:

- 1. Click the **Open perspective** icon on the right-hand side or go to **Window > Open Perspective**.
- 2. Select WebFacing.
- 3. You will see the **WebFacing Project** view on the left-hand side.

Part 2: Creating an IBM WebFacing Tool Project

Follow these steps to create the IBM WebFacing Tool project:

- 1. Select File > New > WebFacing Web Project.
- 2. In the WebFacing Web Project window, enter the project name Flght400 (Figure 8).
- 3. Click the Show advanced button (Figure 8) to see the advanced options and click Next.

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Figure 8: WebFacing Web Project

- 4. In the WebFacing Features window, check Add system screen support and click Next.
- 5. In the **Select display file members to convert** window, select the previously defined connection as **<iSeries_Server> connection**.
- 6. In the Library field, enter FLGHT400, and click the Refresh DDS list button.
- 7. Click the + sign next to FLGHT400 to expand the tree.

- 8. Click the + sign next to **QDDSSRCD** to display all DSPF members.
- 9. Select all display file members under QDDSSRCD.
- 10. Click the first member.
- 11. Scroll down, press the **SHIFT** key and click the last member. (Alternatively, you can select individual display file members by pressing the CTRL key and clicking the individual members.)
- 12. Click the arrow button to move to the right hand side box (Figure 9).
- 13. You can also select all the MNUDDS members under **QMNUSRC**.
- 14. Click Next.

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Figure 9: Select display file members

15. In the Select UIM source members to convert window, click Next.

(There are no UIM help members as a part of this application.)

16. In the Specify CL command window, enter the command line go FLGHT400/FRSMAIN.

17. Change the command label to Flight Reservation System (Figure 10) and click Add.

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pecify CL Commar Enter the CL commar		application, the command lab	els you want to use, a	nd the signon prefere	nce for the generated hypertext links.
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WebFacing generate command that each	es hypertext links that yo link will invoke. On this p	ou can use to launch your appl bage you can define multiple lir	ication from the web. iks, in case several CL	In order to do this, it commands are used to	needs to know the text that will be shown for each link and the CL o launch your application.
MYPGM PARM(∂	Jires parameters, you ca) as the CL command. Ti ntify each hyperlink in th	he variable "∂" will be repl	ne CL command. For e aced when you click or	xample: to invoke pro	gram MYPGM with a part number parameter, you would enter CALL For details, refer to the generated index.html file. The invocation name is
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Command label:	Flight Reservation Sys	stem			
Invocation name	INV1				Add
• Prompt for sig	non				Modify
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User ID					
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CL Command		Command Label	Invocation name	User ID	
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Figure 10: Specify command label information

- 18. Click Next.
- 19. In the **Choose a Web Style** window, select any **Classic WebFacing Style** of your choice and click **Next**.
- 20. In the **Complete WebFacing project** window, select the default option (**No. I only want to create project now**) and click **Finish**.
- 21. After a while, you will see your project in the IBM WebFacing Tool projects view.
- 22. Click the + sign next to your project to see the project details.

23. When you select an item in the **WebFacing Projects** view (Figure 11), it shows properties in the properties view.

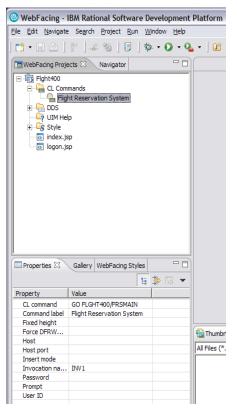


Figure 11: WebFacing Projects view

Part 3: Converting the project

In this part, you will convert the project by following these steps:

1. In the WebFacing Projects view, right-click DDS and select the Convert option.

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	Delete			
	Style	×		
	Convert			
	View Log			
	Properties			
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1				

Figure 12: WebFacing Projects view, Convert option

- 2. Conversion might take a while as the IBM WebFacing Tool retrieves the source code from the iSeries system and creates all Web application components (namely the JSPs and XML documents for each record format).
- 3. After conversion, the **DSPF Conversion Log** is displayed in the log view.
- 4. Select any **Display File** (Figure 11) to look at the record formats.

	Flght400 Log 🕅	3					
C	SPF Conv	versio	n Log				^
	Display Files				Records		
	This section list have been cor		y files that		This section lists all the records in the converted display file.		
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	Message ID	Line	Severity	Message Text		_	
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	DDX0004	15	۲		not yet supported for conversion		
<						>	

Figure 13: Select display file

5. To look at the referenced keywords, click the **Referenced Keywords** tab.

6. Click any display file member to display the keywords (Figure 12).

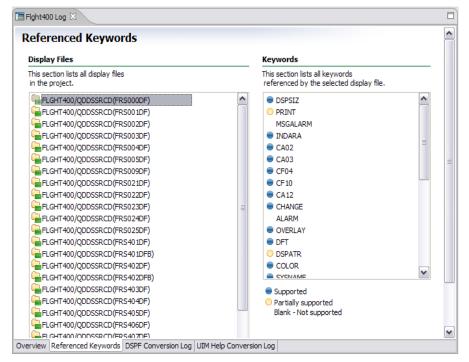


Figure 14: Display keywords

Testing the Web-faced application

In this section, you will test the Web-faced application in a WebSphere Application Server test environment by following these steps:

 In the WebFacing Projects view, right-click your project and select the Run > Run on Server option (Figure 15).

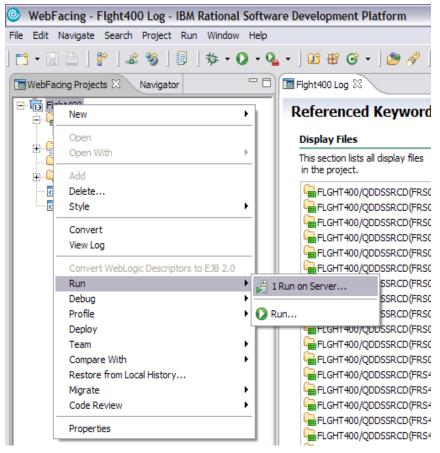


Figure 15: Run on Server option

- 2. In the **Server Selection** window, choose an existing server.
- 3. Select WebSphere Application Server V6.0 under local host and click Finish.
- 4. After a while, you will see a browser displaying the index page of your Web-faced application.

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5. Click Launch (Figure 16) to invoke the Web-faced application.

Figure 16: Select program

- 6. When prompted for user ID and password, enter **<iSeries_userid>** and **<iSeries_password>** and click **Logon**.
- 7. You will see a Flight Reservation System logon screen.

- •	Browser - IBM Rational Sof		e Development Pla	atform					-	
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8. Double-click the **Web Browser** tab (Figure 17) to expand the window.

Figure 17: Expand Flight Reservation System window

9. Press Enter to continue.

10. You will see the main menu (Figure 18) of the Flight Reservation System application.

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	2. Update an existing Reservation 3. Inquire on an existing Reservation 4. Delete an existing Reservation					
	 <u>4.</u> Delete an existing Reservation <u>5.</u> Fax Reservation Information 					
	10. Flight Reservation System Maintenance					
	20. Reservation System Reports					
	90. Signoff					
	Selection or command					
	===>					
	Type option number or command.					
WebFacing						
T T						

Figure 18: Flight Reservation System application screen

- 11. Go back to the Personal Communications Session to look at the interactive job.
- 12. Sign on using **<iSeries_userid>** and **<iSeries_password>**.

13. In **Personal Communications Session**, enter the command line **WRKSBSJOB SBS(QINTER)** (Figure 19). The QQF job is supporting the Web-faced application.

3 Session A - [24 x 80]					
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F3=Exit F4=	Promot F5=	Refresh	F9=Retrieve	F11=Display sched	ule data
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🗊 1902 - Session successfully started	1				1.

Figure 19: Enter command line information

- 14. Try various options in the **Flight Reservation System** application.
- 15. Try **Report** options to see system screen support (option 2 under the **Reports** menu).
- 16. Click **90** to sign off and exit the *Flight Reservation System* application.
- 17. Double-click the **Web Browser** tab to go back to the original window size.

Optional: Packaging, installing, and testing the Web-faced application on an iSeries system

The objective of this section of the lab is to show how to package a Web-faced application into a required J2EE format (EAR file) as well as how to install the application to your WebSphere Application Server instance via the iSeries Web Administration console.

Note: To complete this section you must have WebSphere Application Server installed and configured on your iSeries system.

Part 1: Exporting the EAR file

Export the EAR file by following these steps:

- 1. Make sure you have mapped the network drive to the iSeries system so that you can create the EAR file in your team directory on the iSeries system.
- Select Flight400 project under WebFacing Projects, from the menu option select File > Export.
- 3. In the **Export** window, select **EAR file** (Enterprise Archive file option) and click **Next**.
- 4. In the EAR Export window (Figure 20), select Flight400EAR in the EAR project field.



Figure 20: EAR Export window

- 5. Click browse next to the Destination field (Figure 20)
- 6. Select a location on your iSeries system using the mapped network drive to the iSeries system.

In this example:

```
\QIBM\UserData\WebSphere\AppServer\V6\Base\profiles\WAS60AppSvr\installableApps\
Flght400EAR.ear
```

is used, where **WAS60AppSvr** is the name of the WebSphere Application Server profile created to run the IBM WebFacing Tool application.

7. Check the Export source files option and click Finish.

The export process might take awhile, depending on the network speed.

Part 2: Checking the contents of the EAR file

Verify the contents of the EAR file by following these steps:

1. Using Microsoft® Windows® Internet Explorer, go to where you exported the EAR file on the mapped network drive (Figure 21).

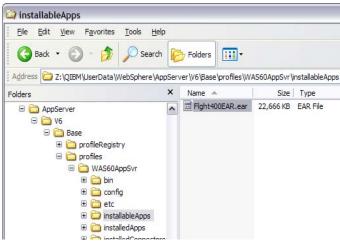


Figure 21: The EAR file on the mapped network drive

 Optional: Right-click the Flight400EAR.ear file and open it with any ZIP utility to see the contents of the EAR file. You will see a Flght400.war modules and application descriptor (application.xml) file (Figure 22).

Fight400EAR.zip						-	
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a Exelaction mea		Fight400.war	WAR File	22,665 KB	No	22,834 KB	1%

Figure 22: Flght400.war module

3. Exit the ZIP utility.

Part 3: Installing the Web-faced application using the IBM Web Administration for iSeries console

To install the Web-faced application with the IBM Web Administration for iSeries console, follow these steps:

- 1. Go to the iSeries task menu:
- 2. In Windows Internet Explorer, type http://<iSeries_Server>:2001.
- 3. When prompted, enter your <iSeries_userid> and <iSeries_password>.
- 4. Click IBM Web Administration for iSeries.
- 5. Click the Manage > Application Servers tab (Figure 23).
- 6. Select your WebSphere Application Server profile in the **Server** list box (Figure 23) where you want to deploy your Web-faced application.

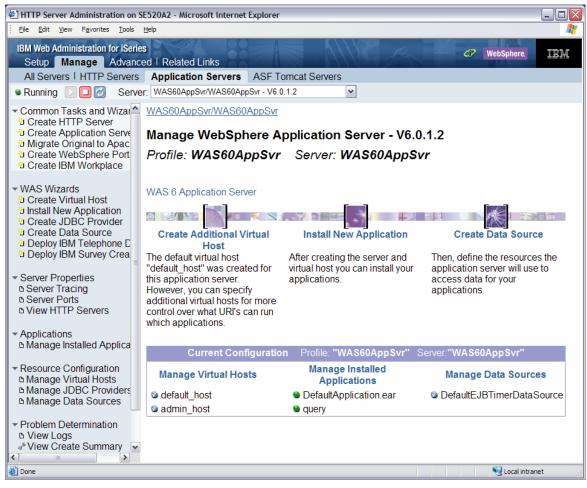


Figure 23: Select WebSphere Application Server profile

7. Click Install New Application under WAS Wizards in the left-hand panel (Figure 23).

8. Delete the default path shown and navigate to the location where you deployed your EAR file in the integrated file system (IFS).

In this example the path is:

/QIBM/UserData/WebSphere/AppServer/V6/Base/profiles/WAS60AppSvr/ installableApps/Flght400EAR.ear

9. Select the Fight400EAR.ear file (Figure 24) and click OK.

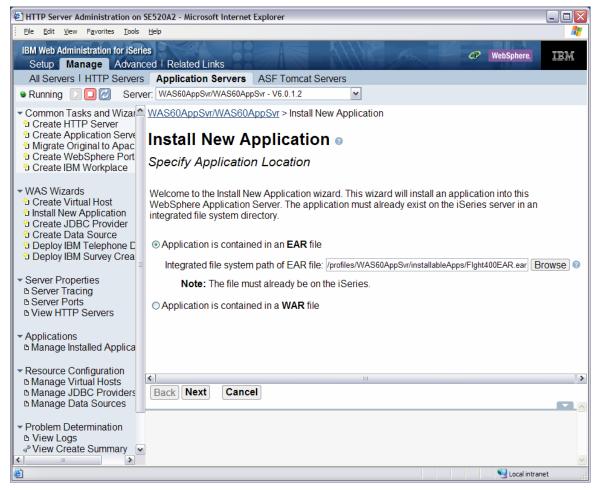


Figure 24: Install New Application window

10. In the Install new application wizard, click Next (Figure 24).

- 11. On the Application deployment options step, take the defaults and click Next.
- 12. On the Map virtual host to Web modules step, click Next.

13. On the **Summary** screen (Figure 25), click **Finish**.

HTTP Server Administration on	SE520A2 - Microsoft Internet Explorer				
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	rer: WAS60AppSvr/WAS60AppSvr - V6.0.1.2	~			
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 WAS Wizards Create Virtual Host Install New Application Create JDBC Provider Create Data Source Deploy IBM Telephone D Deploy IBM Survey Create 	When you click Finish the installation w Integrated file system path of EAR f Application name: Directory application installed to: Pre-compile JSPs:	ile: /QIBM/UserE Flght400)ata/WebSpher		
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 ✓ Resource Configuration ▷ Manage Virtual Hosts ▷ Manage JDBC Providers ▷ Manage Data Sources 					
✓ Problem Determination b View Logs √ [®] View Create Summary ✓	Back Finish Cancel				
Done				Second Second	l intranet

Figure 25: Summary screen

- 14. A yellow hourglass will indicate that the application is currently being installed. Wait until the installation is complete.
- 15. You can press the **Refresh** button to update the status.

16. Wait until the status changes (Figure 26) to a red dot (stopped status).

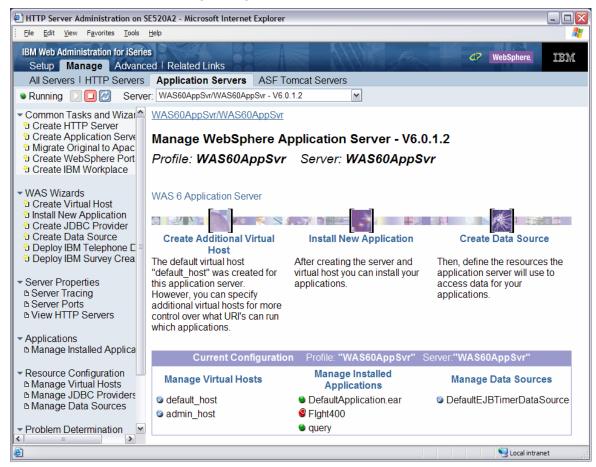


Figure 26: Stopped status

Part 4: Starting the Web-faced application

To start the newly Web-faced application, follow these steps:

- 1. Click the Managed Installed Applications link under Applications.
- 2. Click the check box next to Flght400 (Figure 27) and click the Start button.



Figure 27: Select Flght400

3. You will see a green dot next to the application once it starts.

Part 5: Testing the Web-faced application

Test the Web-faced application by following these steps:

- 1. In Windows Internet Explorer, type http:// <iSeries_Server>:<http_port>/Flight400 and press Enter.
- 2. You will see the index page of your Web-faced application.
- 3. Click **Launch** to invoke the application.
- 4. On the logon page, enter your **<iSeries_userid>** and **<iSeries_password>** and click **Logon**.
- 5. On the Flight Reservation System logon page, press Enter.

6. Try the **Create a New Reservation** report option (Figure 28).

🐔 Flight Reservation Sy	ystem - Microsoft Internet Explorer
Eile Edit View Favori	rites <u>I</u> ools <u>H</u> elp
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▶ Enter	FRSMAIN 10:51:01 Flight Reservation System 11/16/05
▶ Exit	Select one of the following:
Cancel	 Create a New Reservation Update an existing Reservation Inquire on an existing Reservation Delete an existing Reservation Fax Reservation Information
	10. Flight Reservation System Maintenance
	20. Reservation System Reports
	90. Signoff Selection or command ===>
E Done	Second Intranet

Figure 28: Create a New Reservation report option

7. Click **90** to signoff and exit the **Flight Reservation System** application.

Customizing the Web-faced application

This lab is an extension of the *IBM WebFacing Tool Conversion and Testing Lab*, which demonstrates how to use the IBM WebFacing Tool to generate the base application. You will learn customization techniques that you can employ to enhance the base application. This lab assumes that you already have or are familiar with how to use the IBM WebFacing Tool to create this base application.

Changing style properties

The style wizard changes the Web-faced application user interface. During this exercise you will change the user interface of your application by using the **Style** properties that are part of the IBM WebFacing Tool environment. You will apply the style changes on a project level, so all pages in a project will contain the changes. In this lab you will change the text color and font for all highlighted fields.

- 1. Right-click the Flght400 Web-facing project and select the properties option.
- 2. Select the Style > DDS field display attributes node in the list on the left side.
- 3. Click the .. option in the High intensity box (Figure 29).

Conversion	DDS Field Display A	ttributes			
Command Key Recognition Key Button Labels Edit Code Options MNUDDS Options XML Record Metadata	You can customize ho corresponding item. Fixed row height:	w each DDS display attribute ap	oears on	the Web page by changing the	
Run Time	Alignment font-size:	9		Sample	
 Flight Reservation System DDS Object Mappings UIM Object Mappings 	Default field font:	Verdana, Regular, 9		Sample	
- J2EE - Command Key Actions	Blinking:	Verdana, Italic, 9		DSPATR(BL)	
System screens Style	Column separators:	cseparator.gif	<u>.</u> ,		
DDS Field Color DDS Field Display Attribute Window		Repeat: Repeat horizontally Position:	-		
	High intensity:	Verdana, Bold, 9		DSPATR(HI)	
	Underline:	Verdana, Regular Underline, 9		DSPATR(UL)	
	Protected:			DSPATR(PR)	

Figure 29: High intensity box option

4. In the **font** dialog: select **Comic Sans MS** as the font, make the font style **Bold**, select the font size as **14**, and click **OK** (Figure 30).

jont:	Font style:	Size:	016
Comic Sans MS Cordia New Cordia UPC Courier Courier New Courier Ne	Italic	14 9 • 10 11 = 12 14 16	OK Cancel
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Color:	Script: Western	•	

Figure 30: Select font options

- 5. Click **OK** on the properties dialog.
- 6. In the **WebFacing projects** view, right-click your project and select the **Run > Run on Server** option.
- 7. In the Server selection window, choose an existing server, select WebSphere Application Server V6.0 under local host, and click Finish.
- 8. On the index page display, click the **launch** button to launch the Flight Reservation System application.
- 9. When prompted, enter your **<iSeries_userid>** and **<iSeries_password>**.

10. Notice the different fonts and font sizes of some of the text in the highlighted areas of your new graphical screen (Figure 31).

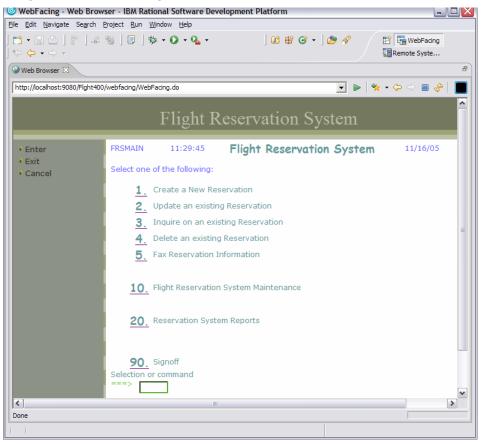


Figure 31: New font name and font size

Employing Web settings (hyperlinks)

In this exercise, you will use Web settings to change the user interface of the Web-faced application. In WebSphere Development Studio Client V6.0, Web settings are part of the LPEX editor (an earlier part of WebSphere CODE designer). Web settings are stored as comment lines in the DDS source. The conversion picks up these specific DDS source comment lines and applies them to the Web-faced user interface.

During this exercise, you will use the LPEX editor to add some Web settings to the DDS source. You will improve the Web user interface for the city selection window. In this window, currently users must enter a **1** in the options field to select a specific city from the subfile. You will change this because it is not how things are typically selected in a Web interface. On a Web page, a link will be more natural in the way it allows the selection of a record to happen. You will change the second column (city name) in the subfile, from a simple text field to a link. The conversion will add logic to the user interface to accomplish the following: When the user clicks this link, under the covers of the screen interface, the options field will be filled with a **1**, indicating that the Enter key has been pressed (Figure 32).

WebFacing - Web Brow	wser - IBM Rational Software Dev	velopment Platform	_ 7 🗙
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▶ HELP			
▶ PAGEDOWN	Airline:	CITY SELECTION WINDOW	
	Date of Flight:	Position To:	
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	 Buffer length longer than re 	cord for member OKDEKS.	
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Done			

Figure 32: Invoke Enter key

- 1. The changed user interface still returns to the application the same information as before the Web setting was applied, but the user interface appears more Web-like to the user. The application itself does not have to be changed.
- 2. The DDS source for city selection subfile is **FRS402DF**.
- 3. In the **WebFacing projects** view, click the + sign next to DDS to expand DDS members.

- WebFacing - FRS402DF.DSPF - IBM Rational Software Development Platform <u>File Edit Source Compile Navigate Search Project Run Window Help</u> 📑 • 📄 🕒 🛛 😫 🖉 🖉 🗐 🗍 🎄 • 🕥 • 🗛 • 🛛 🗳 🐨 🗸 🍅 🔗 😭 🔚 WebFacing 🎨 🗘 • 🔿 • | 🖑 😂 🗉 🗉 🕨 🔺 🛣 🛱 🛐 🖬 Remote Syste... 📧 WebFaci... 🛛 🛛 Navigator 🖓 🗖 🥖 FRS402DF.DSPF 🕅 Line 1 Column 1 Replace ^ ...+A*..1...+....2...+....3...+...4....+....5...+....6.. FLGHT400/QDDSSRCD(FRS000DF) FLGHT400/QDDSSRCD(FRS001DF) 000010 A*%%TS SD 19970811 164021 TAFORD REL-V3R2M0 5 FLGHT400/QDDSSRCD(FRS002DF) 000020 A*%%EC FLGHT400/QDDSSRCD(FRS003DF) DSPSIZ(24 80 *DS 000030 Α FLGHT400/ODDSSRCD(FRS004DF) 000040 A REF(FLGHT400/FRC FLGHT400/QDDSSRCD(FRS005DF) 000050 Α MSGALARM FLGHT400/QDDSSRCD(FRS009DF) 000060 Α PRINT FLGHT400/QDDSSRCD(FRS021DF) 000070 INDARA Α FLGHT400/QDDSSRCD(FRS022DF) 000080 Α HELP FLGHT400/ODDSSRCD(FRS023DF) 000090 Α CF03 FLGHT400/ODDSSRCD(FRS024DF) 000100 Α CF09 FLGHT400/ODDSSRCD(FRS025DF) 000110 CF12 Α FLGHT400/QDDSSRCD(FRS401DF) 000120 Α ROLLUP FLGHT400/ODDSSRCD(FRS401DFB) 000130 A۴ Y 000140 R FRSWIN А REL-V3R2M0 5 000150 A*%%TS SD 19970805 152730 TAFORD - -000160 Α WINDOW(5 34 15 4 »2 Properties 🖾 🗋 000170 Α WDWBORDER ((*COLO 🗄 🔆 🗔 🔻 000180 А (*CHAR ' 000190 **A*** Property Value R SFL SFL 000200 Α FLGHT400/FR Mapping < > - -Thumbnails Styles Colors Links Servers 📃 Console 🛛 Web Settings WebSphere Application Server v6.0 [WebSphere v6.0 Server] WebSphere Application Server v6.0 (WebSphere v6.0) SRVE0242I: τ7 ^ [11/16/05 11:48:21:517 CST] 0000002c ServletWrappe A SRVE0242I: [/1 [11/16/05 11:48:22:048 CST] 0000002c ServletWrappe A SRVE0242I: [/1 [11/16/05 11:48:22:879 CST] 0000002c ServletWrappe A SRVE0242I: [/1 111/16/05 11:48:23:370 CST1 00000020 ServletWrappe A /. ¥ SRVF0242T. Þ > <
- 4. Scroll down to locate FRS402DF and double-click DDS to open it in the LPEX editor (Figure 33).

Figure 33: Locate and open DDS in the LPEX editor

5. In the outline view, click the + sign next to **FRS402DF** to expand the DSPF node.

ØFRS402DF.DSPF \			🗄 Outline 🛛 🔍 🔻 🗖 🗖
Column 1 Replace			FRS402DF.DSPF
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A	PRINT		
A	INDARA		E SFCTYA 3
A	HELP	3	SFLCTL
A	CF03		FKEYS
A	CF09		HISGRCD
A	CF12		
A	ROLLUP		

6. Expand SFL node to display fields in the subfile.

7. Select the **SFCTYN 16** field under SFL in the **Outline** box. You will see the **Web Settings** view in the lower part of the window (Figure 34).

WebFacing - FRS402DF.DSPF - IBM Rational Software Development Platform File Edit Source Compile Navigate Search Project Run Window Help	- 0 ×
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Thumbnails Styles Colors Links Servers Web Settings X Appearance Dynamic key labels HTML overrides Hyperlink Image Location	

Figure 34: Web settings view

- 8. Click **Hyperlink** in the *Web Settings* view (Figure 34).
- 9. Select the **Enable hyperlink** check box.

10. Notice the change in the DDS source line as you select the **Enable hyperlink** check box (Figure 35).

WebFacing - FRS402DF.DSPF - IB Edit Source Compile Navigate Sea			
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FLGHT400/ODDSSRCD(FRS003DF)	000140 A	R FRSWIN	📋 🖶 🖽 SFL
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FLGHT400/QDDSSRCD(FRS022DF)	000190 A*		+ ab SECTYA
FLGHT400/ODDSSRCD(FRS023DF)	000200 A	R SFL SFL	E SFLCTL
FLGHT400/QDDSSRCD(FRS024DF)		SD 19970811 164021 TAFORD REL-V3R2M0 5763-FW1	+ FKEYS
FLGHT400/QDDSSRCD(FRS025DF)	000220 A	SELIO 1A I 8 7CHKMSGID(FRS0028 FLGHT400/	E MSGRCD
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LGHT400/QDDSSRCD(FRS402DFB)	000340 A	SFCTYI 3A 0 8 31	
FLGHT400/QDDSSRCD(FRS403DF)	000440 A	SFCTYA 3 0 8 37DSPATR (ND)	
FLGHT400/QDDSSRCD(FRS404DF)	000540 A*	SPCITA 5 0 8 S7DSPAIR (ND)	
		R SFLCTL SFLCTL (SFL)	
Properties 🛛 Gallery 🏋 🗖 🗖	000940 A	SFLSIZ(0005)	
1 📩 🔁 🔻	001040 A	SFLPAG(0004)	
	001140 A	WINDOW (FRSWIN)	
operty Value	001240 A 50	ALARM	
	001340 A	OVERLAY	
	001440 A 42	SFLDSP	
	001540 A	SFLDSPCTL	
	<		
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	humbnails Styles Colors Lir	is Servers 🛞 Web Settings 🛛	
	- ab SECTYN	Enable hyperlink	
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	Image	C Go to URL © Perform actions	
		Perform Actions	
· · · · · · · · · · · · · · · · · · ·			

Figure 35: DDS source line change

- 11. Under **On Click**, select the **Perform actions** check box (Figure 36).
- 12. Select the **Position cursor to field** check box and choose **&{SFL.SELIO.REF}** in the list box (Figure 36).
- 13. Select the **Set field value to** check box and enter **1** in the field (Figure 36).
- 14. Select the **More actions** check box (Figure 36).
- 15. Select the **Submit function key** radio button and choose **Enter** from the list (Figure 36).

/FRS402DF.D	ISPF 83	Ē	
Line 25			FRS402DF.DSPF
	+A*1+.	····2····+····3····+····4····+···5····+···.6•···+···.7·	. 🕀 📴 DSPSIZ(24 80 *D
000170	A	WDWBORDER((*COLOR WHT) (*I	
000180	A	(*CHAR ' '))	E SFL
000190	A*		🗄 🦆 SFL
000200	A	R SFL SFL	ELIO 1
000210	A*%%TS SD	19970811 164021 TAFORD REL-V3R2M0 5763-PW1	
000220	A	SELIO 1A I 8 7CHKMSGID(FRS0028 FLGHT400/	
000230	A	VALUES(' ' '1')	
000240	A	SFCTYN 16A 0 8 11	SFLCTL
000340		LD 4 fld=&{SFL.SELIO.REF} value=1 func=ENTER	FKEYS
000440	A	SFCTYI 3A 0 8 31	
000540	A	SFCTYA 3 O 8 37DSPATR (ND)	
000640	A*		
000740	A	R SFLCTL (SFL)	
000840		19970811 150303 TAFORD REL-V3R2M0 5763-PW1	
000940	A	SFLSIZ(0005)	
001040	A	SFLPAG (0004)	
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		Set field value to: 1	
		More actions:	
		Submit function key: ENTER	
		C Call JavaScript:	

Figure 36: Select Web Settings

16. Go to File > Save (or CTRL+S) to save the DSPF source.

17. As the SELIO field is not required for selection, select the **SELIO 1** field in the outline view.

₽FRS402DF.DSPF 🕅	6	🗄 Outline 🛛 🔍 💌 🗖
Column 19 Replace		FRS402DF.DSPF
AAN01N02N03Name+++++RLen++TDpBLinPc	sFunctions++++++++++++++++++++++++++++++++++++	i 🗈 👘 📴 DSPSIZ(24 80 *DS3) REF(FLG
A	INDARA	I ■ ■ ■ FRSWIN
A	HELP	SFL
A	CF03	🗄 🔚 SFL
A	CF09	🛨 🙀 🖉 SELIO 1
A	CF12	
A	ROLLUP	🕂 🧓 SFCTYI 3
A*		🕕 🥫 SFCTYA 3
A R FRSWIN		E SFLCTL
A*%%TS SD 19970805 152730 TAFORD	REL-V3R2M0 5763-PW1	
A	WINDOW (5 34 15 42)	🗄 🔤 MSGRCD
A	WDWBORDER((*COLOR WHT) (*DSPATR R]	i msgctl
A	(*CHAR ' '))	

18. Select **Appearance** in the *Web Settings* view and choose the **Hidden** radio button under visibility (Figure 37).

Thumbnails	Styles	Colors	Links	Servers	🔞 Web Setting	s 🛛	
	Appear	verrides n	5		Visibility Visible Hidden Hide characte	r s From To:	

Figure 37: Hide SELIO view

- 19. To hide **1**, select the text (Figure 38).
- 20. Select **1=Select** (outlined in red in Figure 38) under SFLCTL node.
- 21. Select Appearance in the Web Settings view (Figure 38).
- 22. Select the **Hidden** radio button under visibility (Figure 38).

🞯 WebFacing - FRS402DF.DSPF - IBM Rational Software Development Platform				
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2>FLGHT400/QDDSSRCD(FRS000DF)	Line 48 Column 19 Replace 1 change	E-FRS402DF.DSPF		
2>FLGHT400/QDDSSRCD(FRS001DF)	+A*1+ 2 +3+4+5+6+7	DSPSIZ(24 80 *DS)		
2>FLGHT400/QDDSSRCD(FRS002DF)	002020 A 99 SFLEND (*MORE)	FRSWIN		
2>FLGHT400/QDDSSRCD(FRS003DF)	002120 A 60 SFLMSG('Roll key not allow	B SFL ⊕ SFL		
≥>FLGHT400/QDDSSRCD(FRS004DF)	002220 A SFLPS 4S 0H SFLRCDNBR 002320 A 1 11'CITY SELECTION WINDOW'	+ Jab SELIO 1		
2>FLGHT400/QDDSSRCD(FRS005DF) 2>FLGHT400/QDDSSRCD(FRS009DF)	002320 A 1 11'CITY SELECTION WINDOW' 002420 A DSPATR(HI)			
2>FLGHT400/QDDSSRCD(FRS021DF)	002520 A 3 7'Position To:'	+ ab SFCTYI 3		
2>FLGHT400/QDDSSRCD(FRS022DF)	002620 A SEARCH 16A I 3 20CHECK(LC)	+ Jab SFCTYA 3		
2>FLGHT400/QDDSSRCD(FRS023DF)	002720 A 5 7'1=Select'	SFLCTL		
2>FLGHT400/QDDSSRCD(FRS024DF)	002820 A*\$\$WB 4 FLD	😟 🎦 SFLCTL(SFL)		
2>FLGHT400/QDDSSRCD(FRS025DF)	002920 A COLOR (BLU)	12 SFLPS 4,0		
2>FLGHT400/QDDSSRCD(FRS401DF)	003020 A 7 7'1 City Name Ini			
2>FLGHT400/QDDSSRCD(FRS401DFB)	003120 A DSPATR(HI)	+ 4 'Position To:'		
2>FLGHT400/QDDSSRCD(FRS402DF)	003220 A*	+ Jan SEARCH 16		
2>FLGHT400/QDDSSRCD(FRS402DFB)	003320 A R FKEYS	+ A ■ 1=Select		
2>FLGHT400/QDDSSRCD(FRS403DF)	003420 A*%%TS SD 19970811 150303 TAFORD REL-V3R2M0 5763-FW1			
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	Location To:			
	- Style-			
	Override style class: wf_default wf_field			
	-Value			
	Override constant text:			
	,			

Figure 38: Select and hide text

- 23. Choose File > Save (or CTRL+S) to save the DSPF source.
- 24. Click **X** to close the DPSF editor window.

Reconvert the modified DSPF member:

- 25. Right-click **FRS402DF** and select **convert**.
- 26. In the **WebFacing projects** view, right-click your project and select the **Run** > **Run on Server** option to test the modifications.

The city selection subfile will show the hyperlink selection, which includes hidden selection fields and text (Figure 39).

Using the IBM WebFacing Tool with FLGHT400 lab

(WebFacing - Web Brows	er - IBM Rational Software Developme	ent Platform		- - ×			
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	▶F12	FLIGHT INFORMATION	TICKET ORDER INFORMATION					
	▶ HELP							
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	http://localhost:9080/Flght400/w	vebfacing/WebFacing.do#						
L								

Figure 39: City Selection Window

Using JavaScript to add a clock

During this exercise, you will use the Web tools in the WebSphere Studio Workbench to add a clock to the status bar of the browser window of the Web-faced application.

Execute all JavaScript[™] in the **Client Script\usr** folder at the time of loading the page. This makes it easy to add JavaScript to an application that has been enhanced by the IBM WebFacing Tool. For this example, you will add **Clock.js** to the **\ClientScript\usr** folder of the project. **Clock.js** will display the current date and time in the status bar of the browser.

- 1. Go to the **WebFacing** perspective.
- 2. Switch to the Navigator view by selecting the Navigator tab.
- 3. Expand the Flght400 project.
- 4. Go to the following folders: **WebContent** > **webfacing** > **ClientScript** > **usr** (shown in Figure 40).

WebFacin 🔁 Navigator 🛿 🦳	
(•
⊢ 🚰 Flght400	~
🖅 🗁 .externalToolBuilders	
🕀 🗁 config	
🕀 🗁 JavaSource	
🖃 🔁 WebContent	
🕀 🗁 META-INF	
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🕀 🗁 UIMHelp	
🕀 😥 WEB-INF	
index.jsp	
🕀 🗁 Web Diagrams	~
	-

Figure 40: Flght400 folders

- 5. Right-click the **WebContent/webfacing/ClientScript/usr** directory.
- 6. From the **Pop-up** menu select **New** > **Other**.

- 7. In the select wizard window, select Web > JavaScript File and click Next.
- 8. For the filename enter **clock** and click **Finish**.
- 9. Change the **clock.js** file source code **EXACTLY** as shown below:

```
// clock.js
// newFunction
function doClock() {
    window.setTimeout("doClock()",1000);
    today = new Date();
    self.status = today.toString();
    }
doClock()
```

- 10. Save the changes by clicking **File** > **Save** from the menu bar.
- 11. Close the **clock.js** file in editor by clicking the **X** on the **clock.js** window.
- 12. Click the WebFacing projects view.

13. Right-click your project and select the **Run** > **Run on Server** option to test the modifications.

Notice that in the status bar of the browser window the clock is displayed and is updated every second (Figure 41).

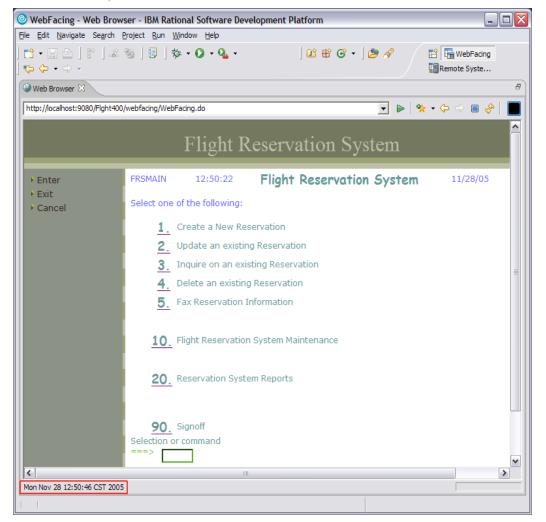


Figure 41: Display clock

- 14. If you do not see the date and time displayed at the bottom of the window, it will be because of the page caching. To overcome this you might re-start the project.
- 15. Select the **Servers** view from the bottom tabs on the right-hand side window.
- 16. Right-click the WebSphere Application Server V6.0 and select **Restart project** > **Flight400EAR** (your project).
- 17. You will see lot of messages in the console view indicating that the application is started.
- 18. Run the application again.

Creating a Web-facing portlet

This section of the lab will take you through the Web-facing portlet wizard to create a Web-facing portlet project. The **WebSphere Portal Test Environment** must be installed into WebSphere Development Studio Client for iSeries to complete this lab.

Creating a Web-facing portlet project

In this part you will create the Web-facing portlet project by following these steps:

- 1. In the WebSphere Development Studio Client window, go to the **WebFacing** perspective.
- 2. Select File > New > WebFacing Portlet Project.
- 3. In the **WebFacing Portlet Project** window (Figure 42), enter the project name **Flight400portlet**.
- 4. Click the **Show advanced** button to see advanced options. In the target server field select **WebSphere Portal V5.1 stub** and click **Next**.

WebFacing Portlet Project. You can create a new WebFacing portlet application project, or add a WebFacing portlet to an existing portlet application project. Image: Fight400portlet Nage: Fight400portlet Project location: C:\WDSC\WorkSpaces\workspace\Fight400portlet Browse Image: Add a WebFacing portlet to an existing portlet application project. Image: Fight400portlet Browse Image: Image: C:\WDSC\WorkSpaces\Workspace\Fight400portlet Browse Image: Image: C:\WDSC\WorkSpaces\Workspace\Fight400portlet Image: C:\WDSC\WorkSpaces\Workspace\Fight400portlet Image: C:\WDSC\WorkSpaces\Workspace\Fight400portlet Image: C:\WDSC\WorkSpaces\Vight400portlet Image: C:\WDSC\WorkSpaces\Vight400portlet Image: C:\WDSC\WorkSpaces\Vight400portlet Image: C:\WDSC\WorkSpaces\Vight400portlet Image: C:\WDSC\WorkSpaces\Vight400portlet Image: Fight400portlet Image: Fight400portlet Image: Fight400portlet Image: Fight400portlet	WebFacing	Portlet Project		×
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Figure 42: WebFacing Portlet Project window

5. In the WebFacing Features window, check Add system screen support and click Next.

- 6. In the **Select Display File Members To Convert** window, select previously defined connection: <iSeries_Server> connection.
- 7. In the Library field, enter FLGHT400 and click the Refresh DDS list button.
- 8. Click the + sign next to FLGHT400 to expand the tree.
- 9. Click the + sign next to QDDSSRCD to display all DSPF members.
- 10. Select all display file members under QDDSSRCD.

To do this, click the first member, scroll down, press **Shift**, and select the last member. (Alternatively, you can select individual display file members by pressing the **Ctrl** key while picking the individual members.)

11. Click the arrow button to move these to the right-hand side box (Figure 42).

elect Display File Source Membe	ers To Convert					-
18 members added for QDDSSRCD						1
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Connection: se520a2						▼ New.
brary: FLGHT400	▼ File: *ALL		▼ Memi	ber: *ALL		
	_		and a second	pes: DSPF MN	LIDDC	-
<u>R</u> efresh DDS list						
SE520A2 FLGHT400 *ALL *ALL DSPF	MNUDDS	Library	File	Member	^	
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Figure 43: Select QDDSSRCD display file members

- 12. Similarly, select all MNUDDS members under QMNUSRC and click Next.
- 13. In the **Select UIM Source Members To Convert** window, click **Next**. (**Note**: There are no UIM help members as a part of this application.)

- 14. In the **Specify CL Commands** window (Figure 44), enter the command: **go FLGHT400/FRSMAIN**
- 15. Change the command label to Flight Reservation System and click Add.

		our application, the command lab	els you want to use, ar	nd the signon preference	e for 🚽
e generated hyperi	ext links.				
oject name: Fight	400portlet				
at will be shown fo mmands are used t your program requ art number paramet	each link and the Cl to launch your applica ires parameters, you ter, you would enter	t you can use to launch your app command that each link will invo ation. I can enter them as variables in t CALL MYPGM PARN(∂) as th o the generated index.html file.	ke. On this page you o he CL command. For e e CL command. The va	an define multiple links, xample: to invoke progr riable "∂" will be rep	, in case several C am MYPGM with a placed when you
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Command label: Invocation name © Prompt for sign © Specify OS/40 CL Command	Flight Reservation INV1 on 0 signon values	System		User ID	odify

Figure 44: Specify CL Commands window

- 16. Click Next.
- 17. In the Choose a Web Style window, select the Web style of your choice and click Next.
- 18. In the **Complete WebFacing project** window, select the default option (**No. I only want to create project now**) and click **Finish**.
- 19. After awhile, you will see your Web-facing portlet project in the WebFacing Projects view.
- 20. Click the + sign next to your portlet project to see the project details.

Converting the Web-facing project

1. In the **WebFacing Projects** view, right-click **DDS** and select **Convert** (Figure 45).

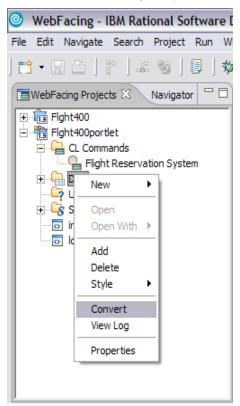


Figure 45: Select the Convert option

2. Conversion might take awhile because, during conversion, the IBM WebFacing Tool retrieves the source code from the iSeries system and creates all the portlet application components (namely JSPs and XML documents) for each record format.

3. After conversion, you will see the **DSPF Conversion Log** displayed in the log view. Select any display file to review the record formats (Figure 46).

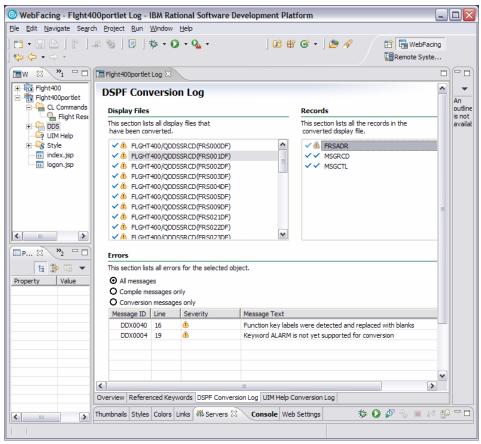


Figure 46: DSPF Conversion Log window

4. To look at the referenced keywords, select the **Referenced Keywords** tab at the bottom of the conversion log window.

5. In the **Referenced Keywords** window, click any display file member to display the keywords (Figure 47).

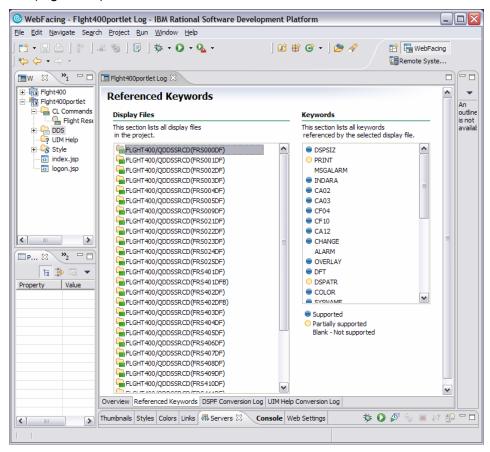


Figure 47: Referenced Keywords window

Testing the Web-facing portlet

In this section, you will test the Web-facing portlet you created in the previous step in the WebSphere Portal Server test environment.

Testing the Web-facing portlet in the WebSphere Portal test environment

- 1. In the **WebFacing Projects** view, right-click your portlet project and select the **Run** > **Run on Server** option.
- 2. In the Server Selection window (Figure 48), check Manually define a server and select WebSphere Portal Server V5.0 Test Environment (below server type) and click Finish.

Server Selection					
Define a New Server					
Choose the type of server to create.					
How do you want to select the server?					
C Choose an existing server					
Manually define a server					
Specify the host where you want to publish					
Host name: localhost	-				
Select the <u>s</u> erver type:					
WebSphere Express v5.1 Test Environment	<u>^</u>				
WebSphere Portal v5.0 Server Attach					
WebSphere Portal v5.0 for Import, Export & Deploy					
WebSphere Portal v5.1 Server Attach	~				
	ew By: Vendor 💌				
Description: Runs portlet projects out of the workspace on the local					
Set server as project <u>d</u> efault (do not prompt)					
< Back Next >	inish Cancel				

Figure 48: Server Selection window

3. After awhile, you will see a browser displaying the index page of your Web-faced portlet application.

4. Click **Launch** (Figure 49) to invoke the Web-faced application.

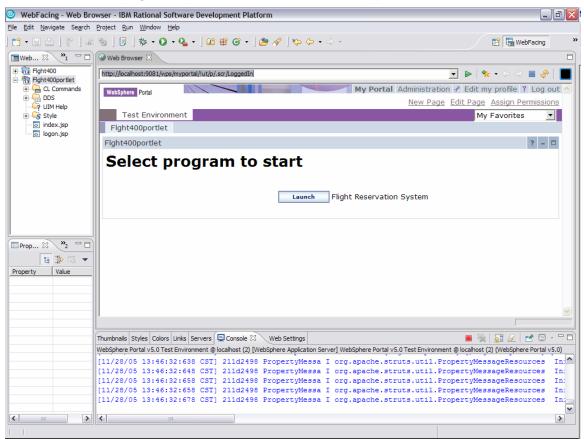


Figure 49: Launch the Web-faced application

5. When prompted for the user ID and password, enter the **<iSeries_userid>** and **<iSeries password>** and click **Logon**.

- 6. You will see a Flight Reservation System logon screen.
- 7. Double-click the Web Browser tab (Figure 50) to expand the window.

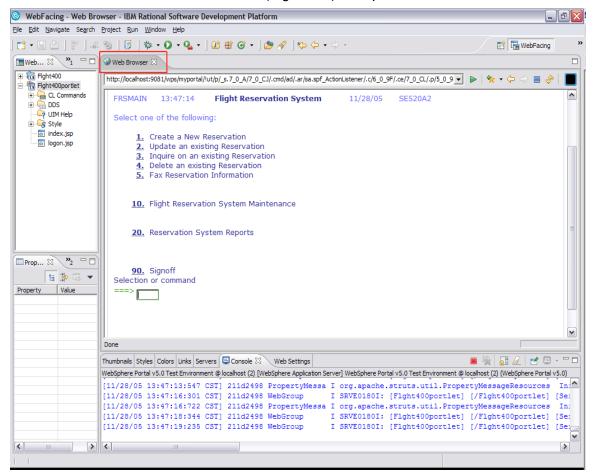


Figure 50: Web Browser tab

- 8. Go back to **Personal Communications Session** to look at the interactive job. Sign on with your **<iSeries_userid>** and **<iSeries_password>**.
- In the Personal Communications Session window, enter on the command line: WRKSBSJOB SBS(QINTER). The QQF job is supporting the Web-faced application.
- 10. In the WebSphere Development Studio Client window, try various options in the Flight Reservation System application. (Try **Report options** to see system screen support [option 2 under the **Reports** menu].)
- 11. Click **90** to sign off and exit the Flight Reservation System application.
- 12. Double-click the **Web Browser** tab to go back to the original window size.

END OF LAB

Summary

In this lab, you practiced the following:

- Created and tested a Web-faced application with the IBM WebFacing Tool
- Packaged and installed the Web-faced application on an iSeries system using the IBM Web Administration for iSeries console
- Customized the Web-faced application with tools in WebSphere Development Studio Client
- Created and tested the Web-faced portlet using the Web-facing portlet project wizard

Resources

These Web sites provide reference materials to supplement the information contained within this lab:

- IBM eServer[™] i5 Information Center publib.boulder.ibm.com/infocenter/iseries/v5r3/ic2924/index.htm
- IBM eServer p5 Information Center publib.boulder.ibm.com/infocenter/pseries/index.jsp
- IBM Publications Center www.elink.ibmlink.ibm.com/public/applications/publications/cgibin/pbi.cgi?CTY=US
- IBM Redbooks™
 ibm.com/redbooks
- Follow a roadmap: *iSeries Developer Roadmap: End to End Demo ibm.com/servers/enable/site/ideveloper_j2ee/etoe*

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