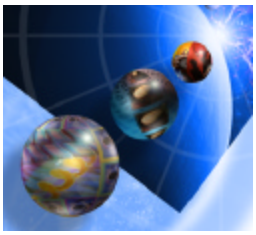


IBM WebSphere Development Studio Client for iSeries

WebFacing an iSeries Green Screen Application using WDSC Version 5.0

Exercises

Overall Lab Guide

The objective of the WebFacing lab is to have the students work with an existing 5250 application and use the WebFacing tool to create a browser based user interface, and then run this application as an *e*-business application. This lab is an extension of the Websphere Application Server Express for iSeries Configuration and Administration lab demonstrated how to create and test WebSphere Instances. At the end of the lab, the student should know how to use the WebFacing. The Lab will guide the student through most of the steps involved in the WebFacing process. The Lab also shows how to create a Websphere Application Server Express V5.0 Web Application in the Websphere Application Server Express V5.0 Administration Console.

The Steps in this Lab

1. A Brief Look at 5250 Application
2. Creating a WebFacing project in WDSc
3. Convert the DDS to JSP's
4. Running the WebFaced Application in Websphere Application Server Express V5.0 Test Environment in **W**DSC
5. Creating the Web Archive (WAR) file
6. Creating a Enterprise Application in the WebSphere Application Server
7. Run the WebFaced application

1. A brief look at the 5250 application

Exploring the 5250 application

During this first section of the Lab you will be familiarizing yourself with the 5250 screens of the application you are about to WebFace later on during this Lab exercise.

1. You will explore the 5250 application by:

- Running it in an Emulation Window
- Learning how to invoke it
- Learning what screen it provides
- Learning what command keys are supported and what functions they allow

What You Should be Able to Do

As a result of this exercise you will be able to go through the application's screens. You will understand how to invoke the application. You will understand how to navigate through the application.

- Invoke the application
- Use the application screen and command keys
- Know the functionality of the application

Setup

Download the apilib.savf file from the website. Restore the contents of this save file to a library called APILIB on the iSeries Server. Add the APILIB library to the library list for the user profile to be used in this lab.

For the purposes of this lab, you are team number 1. When asked for a team number xx, assume team01.

Signing on to iSeries

Start 5250 Emulator Session to Lab iSeries System (Refer to Lab Information Sheet)

You should see an iSeries 5250 emulation window with the sign on screen on your desktop.

- Sign on using a valid UserID and Password .

- On the command line of the 5250 screen invoke the Order Entry Application by keying in:

- **CALL ORDENTR**

- The first panel shows requiring a customer number
- Press **command key 4**
- You will be presented with a list of customers in a Window
- Select a customer by keying in **1** in the Options entry field
- Press the Enter key to proceed
- You'll see a screen with the **detail customer data**
- You'll notice that an Order number has been assigned as well
- You are ready to order some parts
- Press **command key 4** to get a list of parts in a window
- Select a part that has lots of quantity left by keying in a **1** in the option field
- Back on the order screen the part appears on the order, on the first line,
- Change the quantity field to **1** or **2**
- Press Enter, the detail order line is now part of this order
- You can press **command key 6** to accept the order

  If you think you understand how the application works just stop adding orders

- Press **command key 3** to exit the application.

You are now ready to put a brand new user interface onto this application.

2. Creating a WebFacing Project

Using the WebFacing Project Wizard

During this section of the Lab you will use the WebFacing tool project wizard inside the WDSc Integrated Development Environment to create a new WebFacing project. This WebFacing project will then be used to facilitate the conversion of your DDS source and to test the generated output.

You will explore the WebFacing tool project wizard by:

- Invoking the WebFacing tool project wizard
- Stepping through the WebFacing tool project wizard pages ✍
- Providing the correct input for the project wizard ✍
- Start the creation of a new WebFacing tool project ✍

What You Should be Able to Do

As a result of this exercise you will be able to create a new WebFacing Project.

- Start WDSc ✍
- Start the WebFacing tool project wizard ✍
- Step through the project wizard pages ✍
- Provide the correct information to the project wizard ✍
- Browse through the new project in the IDE

__ 1. **Invoking WebSphere Development Studio client (WDSc)**

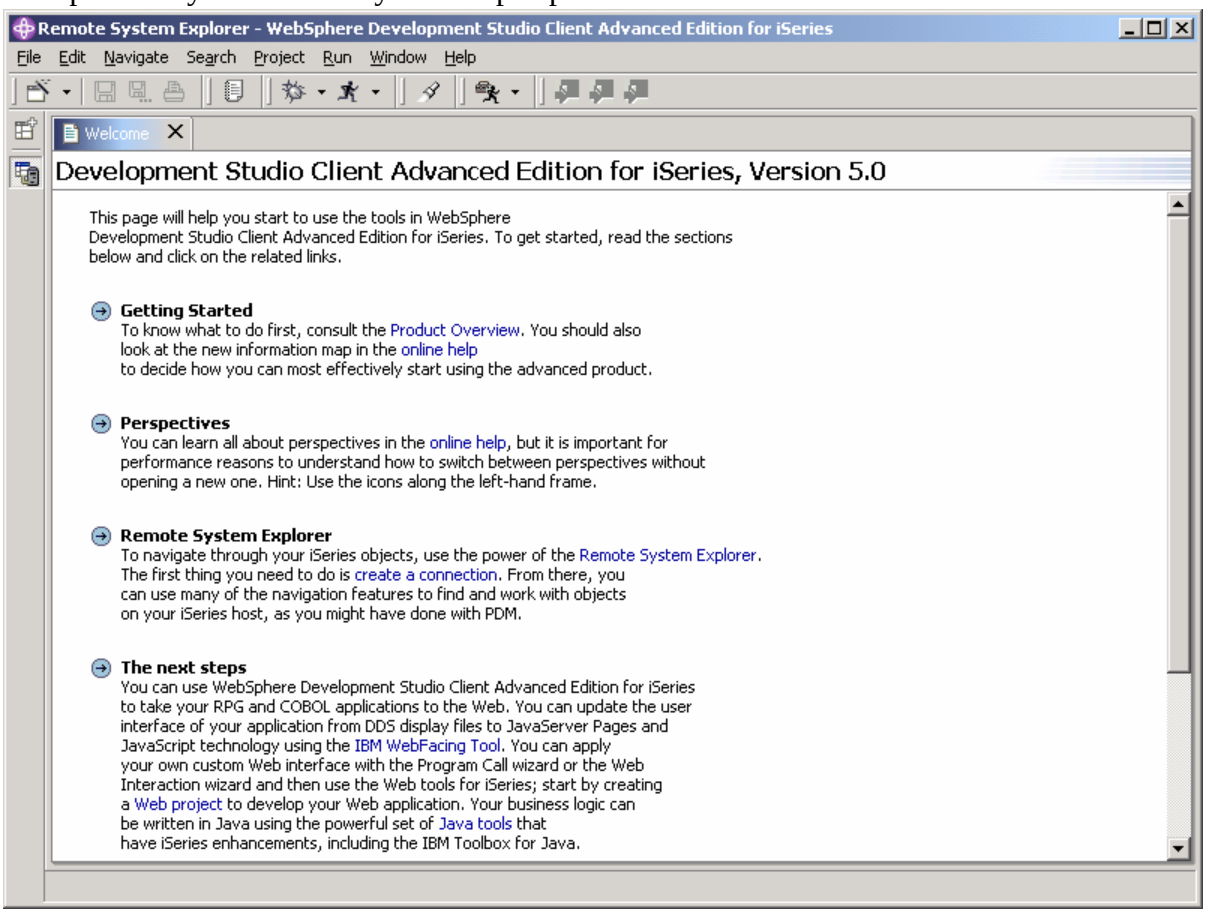
To start Development Studio client, Press the **Start** button on the task bar of your desktop

Choose ***Start*** ✍ ***Programs*** ✍ ***IBM WebSphere Studio -> Development Studio Client Advanced Edition for iSeries***

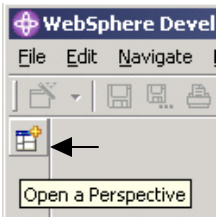
Or Click on the WDSC icon 

on the desktop (if available)

After a few moments of loading, the workbench appears. If the workbench has been used previously it will already show a perspective.



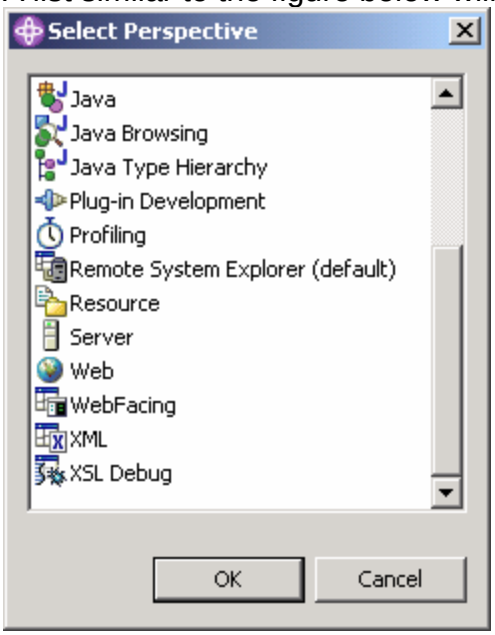
__ 2. **Start the WebFacing perspective**, by selecting the Perspective menu item on the workbench Menu bar.



If there is a **WebFacing option** available on the submenu, select **WebFacing** and skip the next step.

Otherwise select the **Other....** option on the submenu

A list similar to the figure below will appear



Select WebFacing from the list

Press the **OK** pushbutton

__ 3. **Create Web Facing Project**

- Select the **File** option from the Workbench menu bar
- Select **New** from the Menu pull down

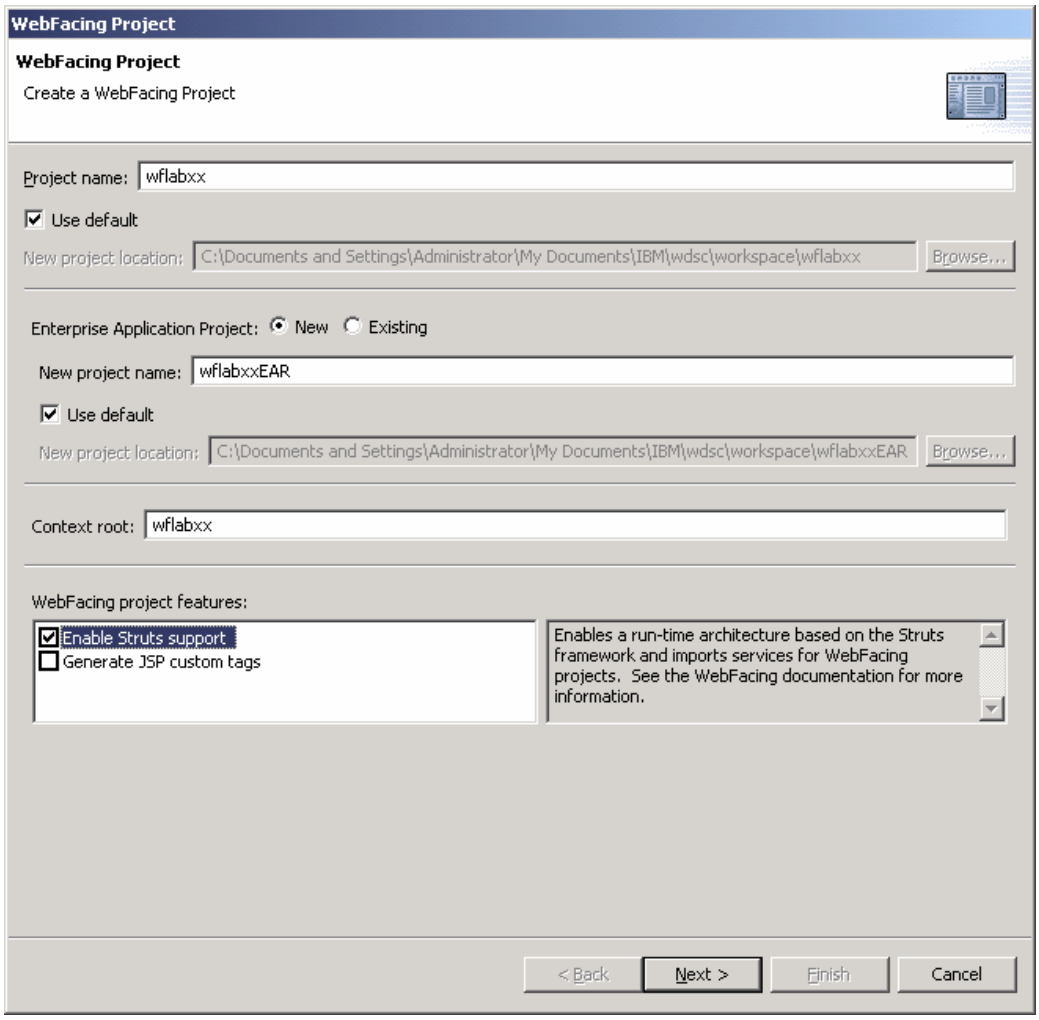
? Select **WebFacing Project** from the next sub menu

The **WebFacing project** wizard will appear

__ 4. **WebFacing Project dialog**

Enter following details:

Project name: wflabxx
(Where xx is your team number … refer to lab information sheet)
Enterprise Application Project name: wflabxxEAR
Context Root: wflabxx
(Where xx is your team number … refer to lab information sheet)



Click on **Next** push button

__ 5. **Select the J2EE level**
On this second page you need to set the J2EE level. For our lab you will need to set it to 1.3.

Press the **Next** button.

__ 6. **The Select display file source members to convert dialog**

On this page of the new project wizard you need to specify where your DDS source is located. Specifically, the WebFacing tool needs to know:

- Server name
- Library name
- Source file name
- Member name

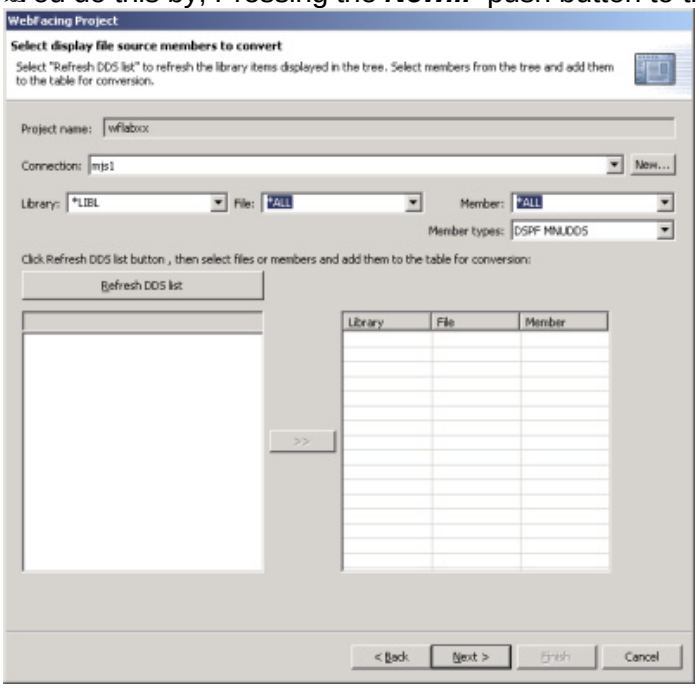
You need to specify the **server name** to be used in the **connection** combination box

Select the correct iSeries server (Refer to Lab Information Sheet) from the drop down combination box list

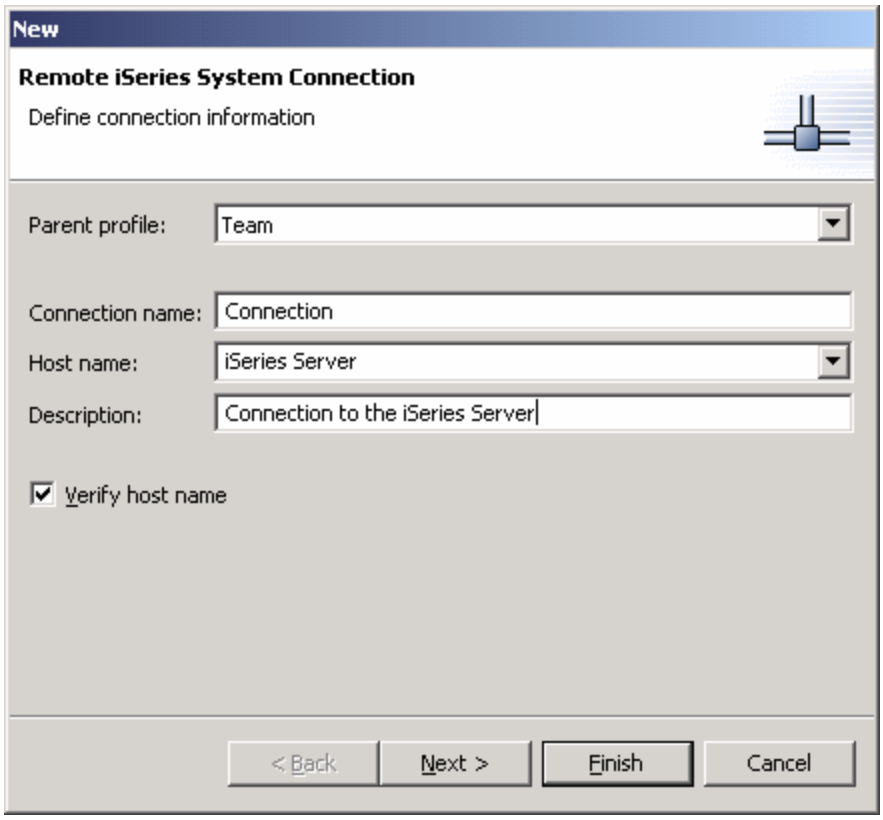
If your assigned server name **appears** in the list, select it and skip to the next step:

If the list does **not** contain your assigned server name, you need to add the server to the list.

You do this by, Pressing the ***New...*** push button to the right of the Connections box.



When the **New Connection** dialog appears,



Select Parent Profile: Team

Enter Connection Name: same as iSeries Hostname
(Refer to Lab Information Sheet)

Enter the Host Name: iSeries Server Name
(Refer to Lab Information Sheet)

Enter Default User ID: iSeries User ID
(Refer to Lab Information Sheet)

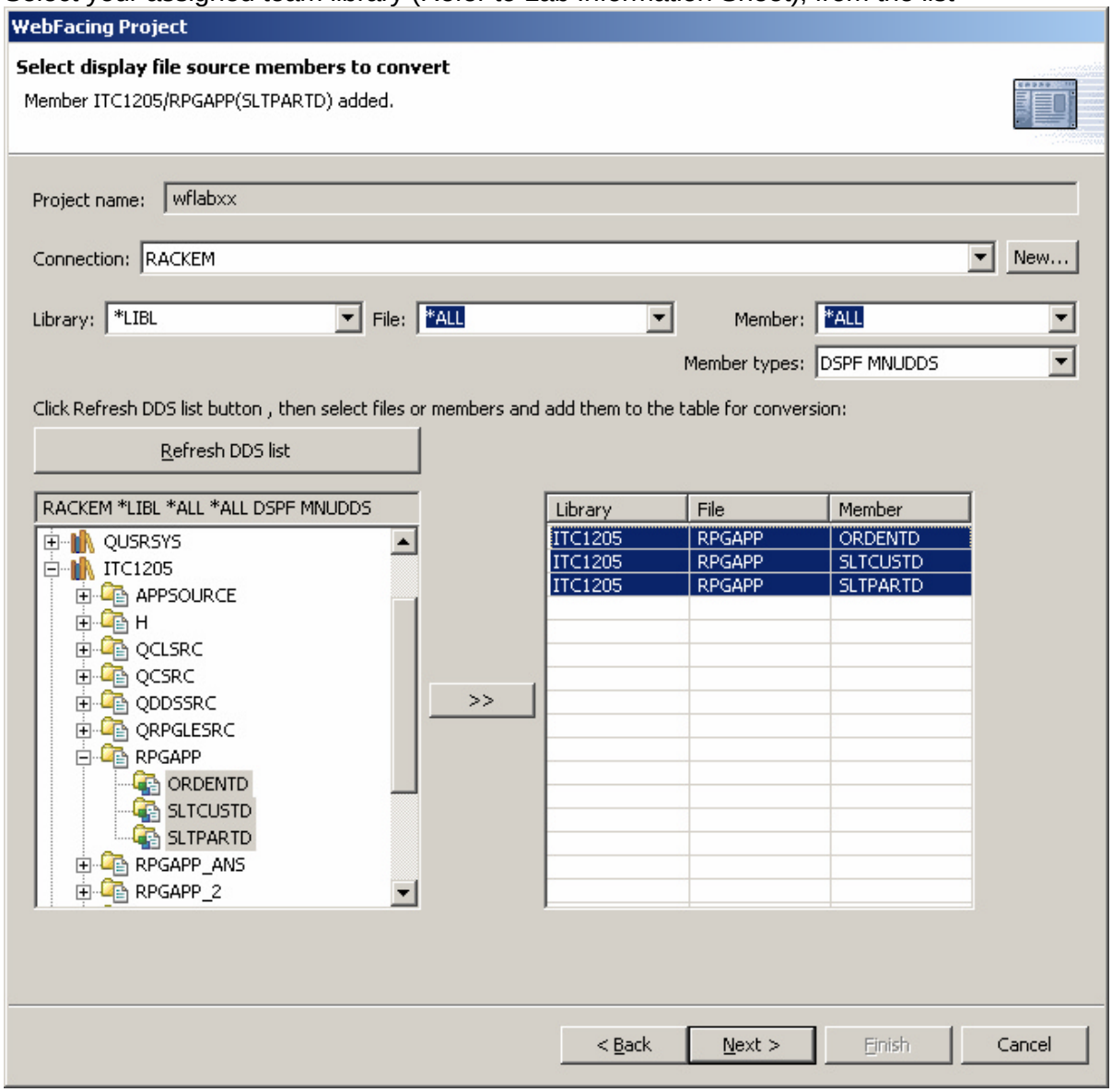
Press the Finish push button in the **New Connection** dialog.

__ 7. Back in the WebFacing Project wizard

- ✍ Check that **your iSeries server** is selected in the **connection combo box**
- ✍ Make sure *LIBL is **selected** in the **library filter** combo box
- ✍ Press the ***Refresh list*** push button
- ✍ When prompted enter iSeries Password and press OK to continue.

The library list of your iSeries job is displayed in the tree view list on the project wizard page.

Select your assigned team library (Refer to Lab Information Sheet), from the list



- ✍ Expand it by clicking on the ✚ sign beside the library name
- ✍ Select source file **RPGAPP** (containing DDS source physical file members) from the expanded list
- ✍ Expand RPGAPP
- ✍ Select **all** members from the list
- ✍ Press the >> push button in the middle to copy the selected members over to the list of selected members
- ✍ Press the **Next >** push button at the bottom of the ***Select Display file source*** dialog to proceed to the next wizard page.

Now the WebFacing tool knows which DDS members to convert for this project.

The **Select UIM source members to convert** dialog appears

If you have UIM help panels you can specify the source locations of the source members on this page of the project wizard, since in this application we don't have UIM help, you can just skip this panel

Press the **Next >** push button at the bottom of the ***Select UIM source*** dialog to proceed to the next wizard page.

__ 8. **The *Specify CL commands* Page**

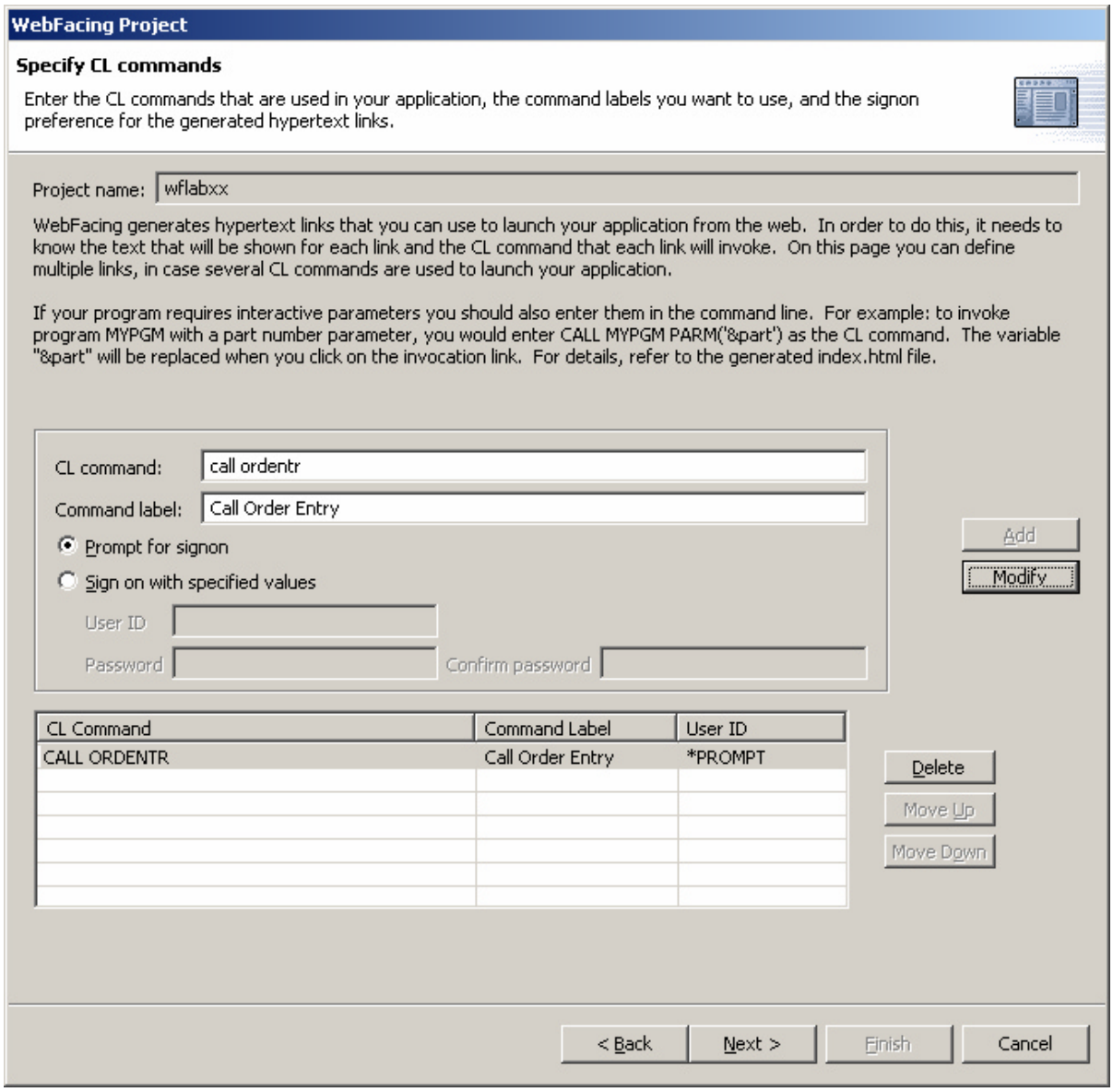
You will now provide the information that will allow the WebFacing wizard to create the initial **index.html** page to start the Order Entry application.

Remember what you keyed in on the command line in the 5250 emulation during the previous exercise to start the order entry application?

In case you forgot, it was: **CALL ORDENTR**

The WebFacing runtime needs to know the invocation command for your application in order to send this invocation command to the iSeries to start your application from the browser.

The following page in the WebFacing project wizard will allow you to specify the necessary information



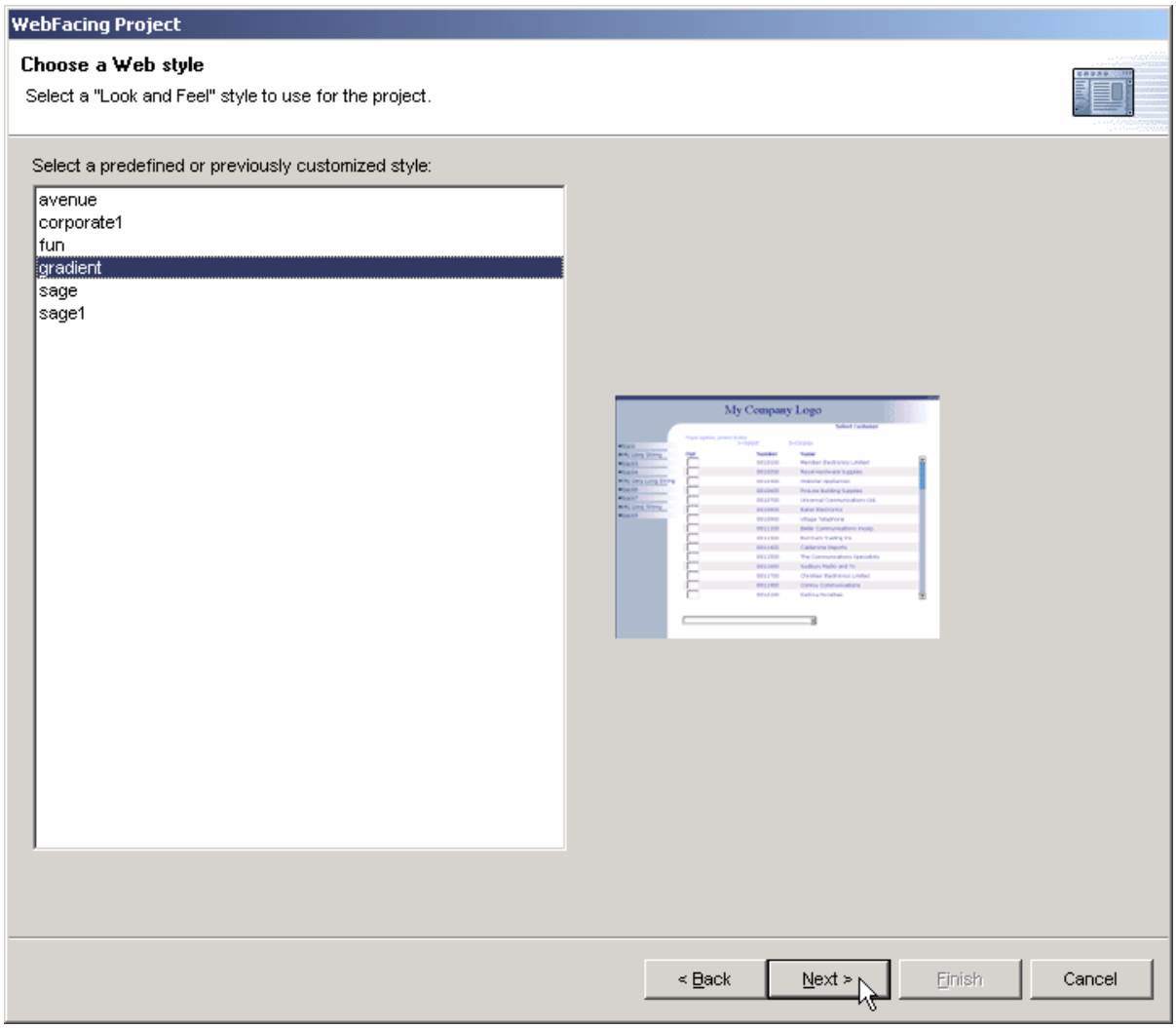
- ✍ Key in: ***CALL ORDENTR*** into the CL command entry field
- ✍ **Key** in: ***Order Entry Application*** into the Command Label entry field
- ✍ Press the **Add** push button on the right side of the dialog.

Make sure the text and command you keyed into the entry fields is shown in the list at the bottom of the dialog

- ✍ Press the **Next >** pushbutton on this project wizard page

__ 9. **The Choose a Web style Page**

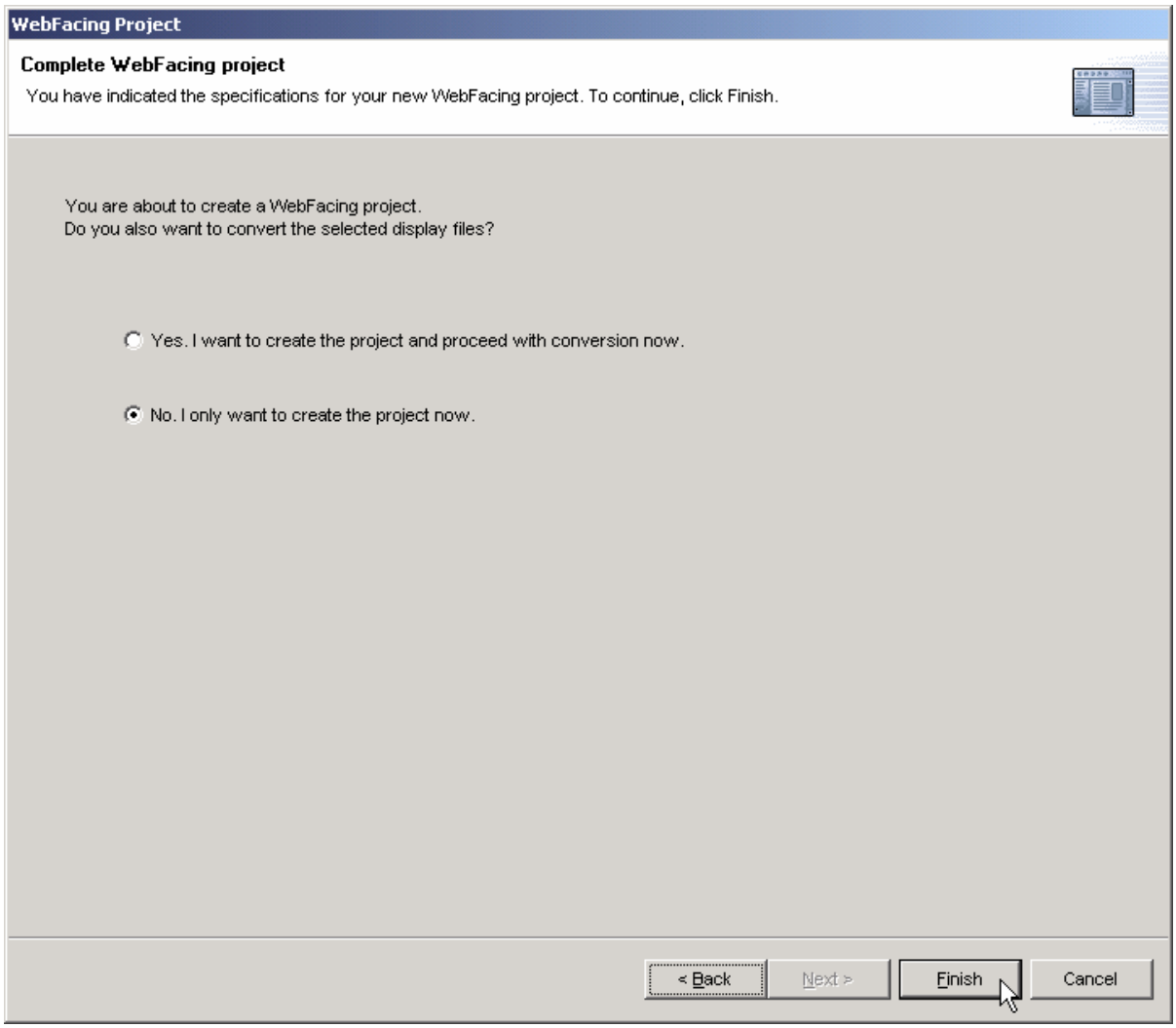
The upcoming page allows you to select a Web style for your converted screens



- ✍ Select any style from the list of available styles
- ✍ Press the **Next** > push button at the bottom of this dialog

__ 10. **The Complete WebFacing Project page**

At this point we want you to just create the project, we don't want you to convert the source now. Conversion is part of the next exercise.



- ✍ Select the ***No, I only want to create the project now*** radio button
- ✍ Press the **Finish** push button

This completes the project set-up exercise

You are now ready to convert and run your application.

3. Convert Selected Members

Converting selected DDS members

During this exercise you will start the conversion of the DDS source that you selected in the previous lab

The following tasks will be covered in this lab:

- Selecting DDS source to convert
- Starting the conversion
- Work with the conversion log

As a result of this exercise, you will have created the JSPs, XML data bean definitions, and several other files needed for the WebFaced application.

What You Should be Able to Do

As a result of this exercise you will be able to use the **WebFacing tool** to convert selected DDS source members.:

Use the WebFacing tool to select certain members for conversion

Use the WebFacing tool to start the conversion process

Analyze the conversion logs

Using the WebFacing tool to Start the Conversion

__ 1. In the **WebFacing perspective,** Select the project you have been working on in the previous exercise **wflabxx**

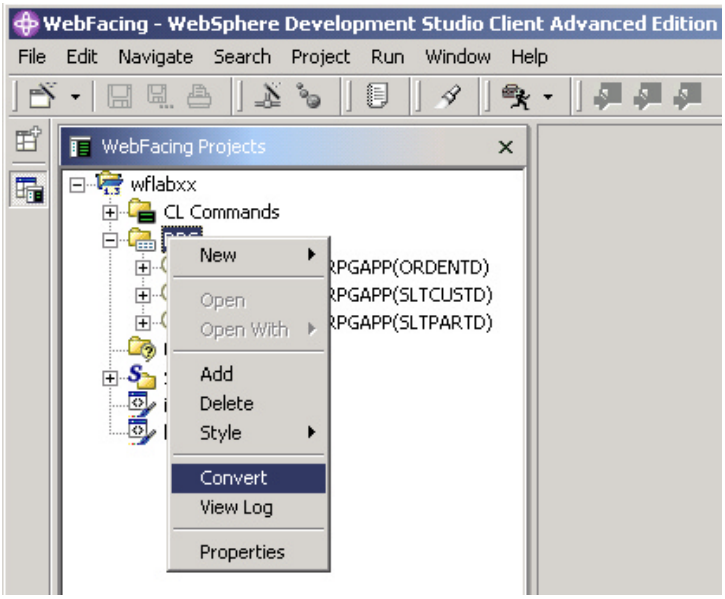
- ✍ Expand this project by **clicking** on the ✚ sign beside its icon in the tree view
- ✍ You should see an icon named **DDS** in the expanded tree
  - ✍ **If** you **don't** see a **DDS** folder:
    - ✍ You might be in the **Navigator** view,
      - ✍ Check the **pane title bar,**
    - ✍ If it shows **Navigator**,
      - ✍ Locate the **WebFacing projects** Tab at the **bottom** of the list pane
      - ✍ Click on it.
  - ✍ Now the **WebFacing projects** view should be active and you should be **able** to locate the **DDS** folder**.**

__ 2. Expand the DDS folder by **clicking** on the ✚ sign, beside it

You should see all **3 members** that you selected in the previous exercise.

Since you are converting all members in the project you can work with the **DDS folder icon**

Right mouse **click** on the **DDS** folder icon

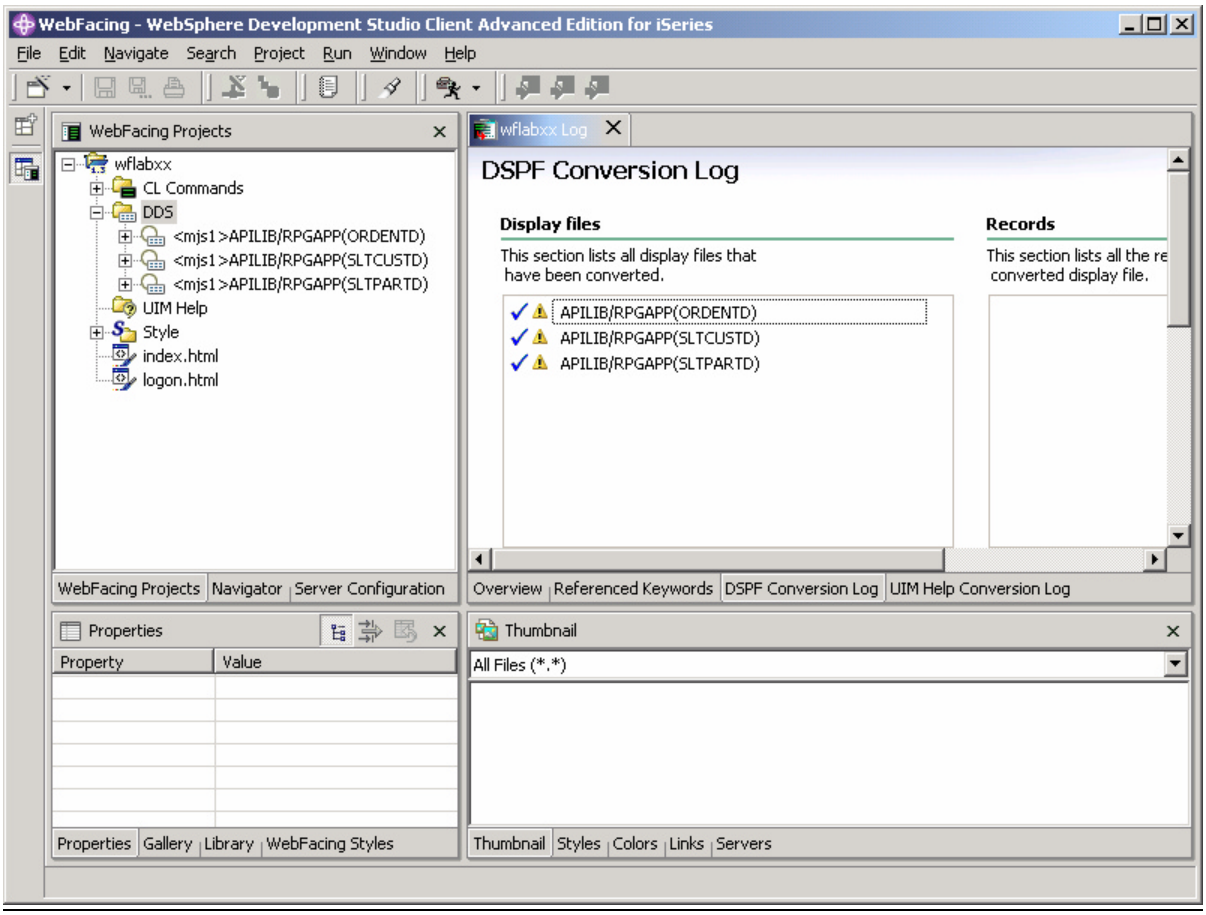


Select **Convert** from the pop up menu

The conversion process starts.
(You **may** be prompted for a signon and password. Look for the screen and use your team id and password, if you don't see a prompt, it is OK, just continue.)

Wait until the conversion finishes

__ 3. Notice the conversion log in the right hand pane,

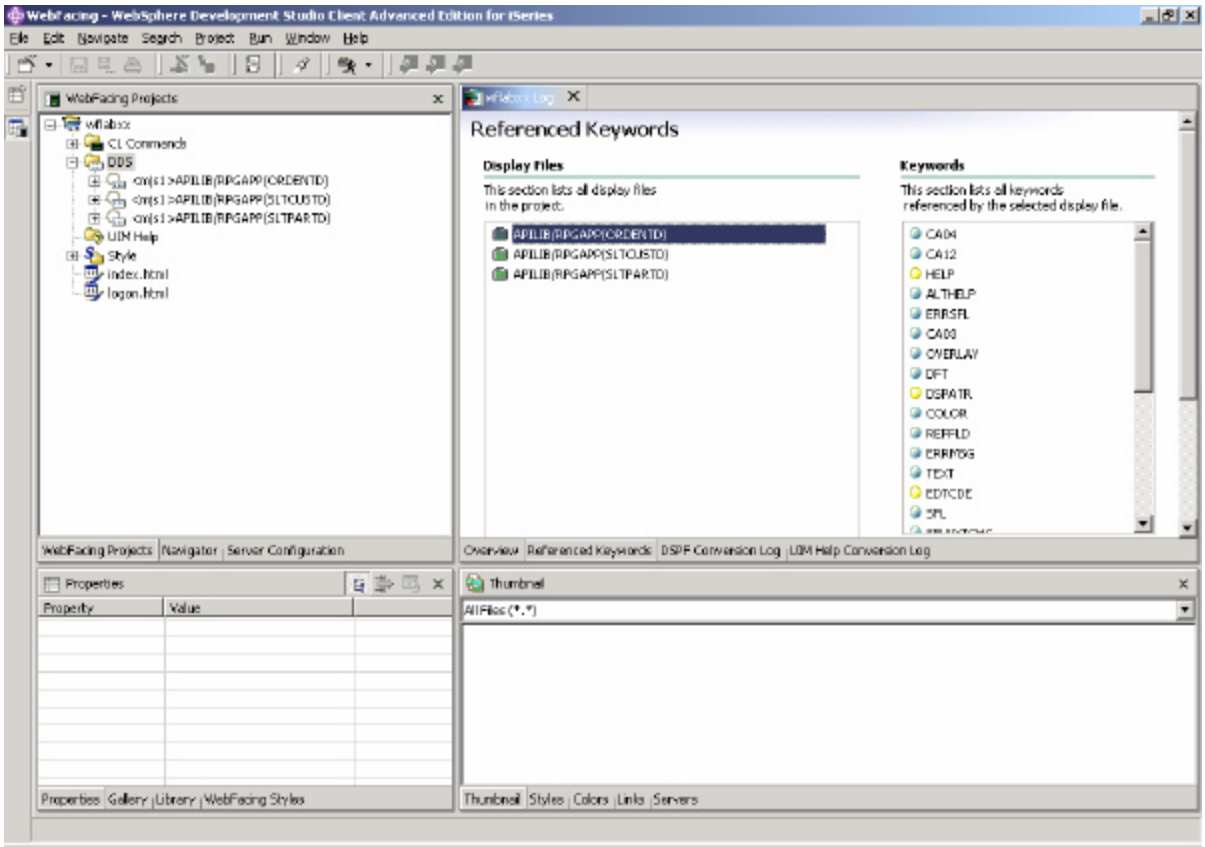


Check the log

- At the bottom of the log are tabs,
  - Overview
  - Referenced Keywords
  - DSPF Conversion Log
  - UIM Help Conversion Log

On these pages you can get more details on the conversion

e.g. Referenced Keywords



Check out the information on the other Log pages

Then proceed to the next lab exercise and run the application with its new User Interface.

4. Running the WebFaced Application

Running the WebFaced application

During this exercise you will use the **Websphere Application Server Express V5.0 test environment** that is embedded in WDSc. Using the test environment will make the process of testing your application a lot easier than doing the testing in a remote Websphere Application Server Express V5.0 environment. After you have tested your application you would move the files and use Websphere Application Server Express V5.0 on a Server to do the final testing and then move the files from the WebFacing conversion onto your production Websphere Application Server Express V5.0 environment.

The following tasks will be covered in this lab:

- Starting the application in the test environment
- Selecting the correct link on the invocation index.html page to invoke the WebFaced application
- Using the WebFaced application

As a result of this exercise, you will specify in the WebFacing perspective that you want to run your project in the WDSc test environment. From the initial web page you will select the link created by the WebFacing tool to invoke the WebFaced application.

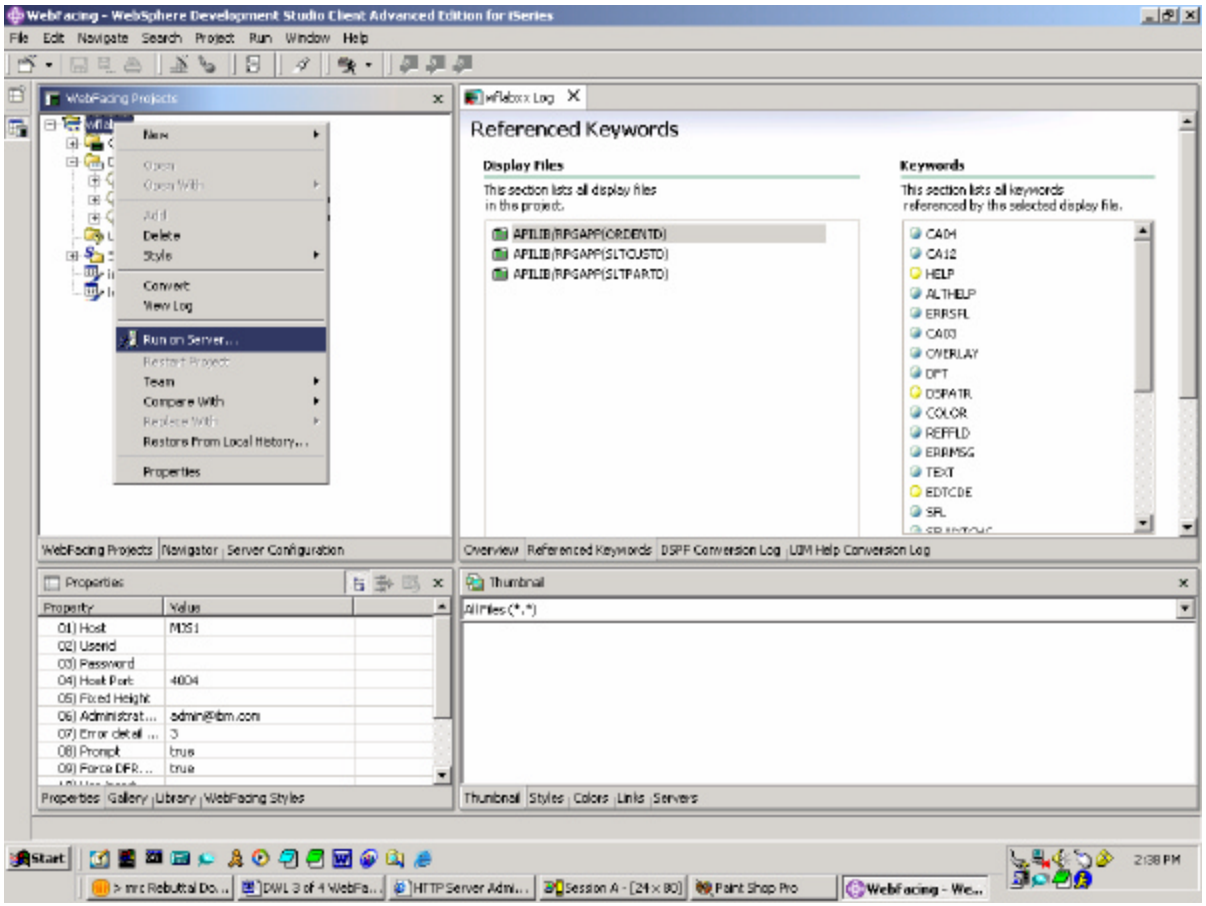
What You Should be Able to Do

As a result of this exercise you will be able to load the initial invocation page and invoke the WebFaced application in the browser that is included in WDSc. You will understand how to navigate through the converted User Interface.

- Use the Websphere Application Server Express V5.0 test environment to run the Web Application
- Select the Link on the invocation web page to invoke the RPG application
- Use the html based user interface to step through the WebFaced application

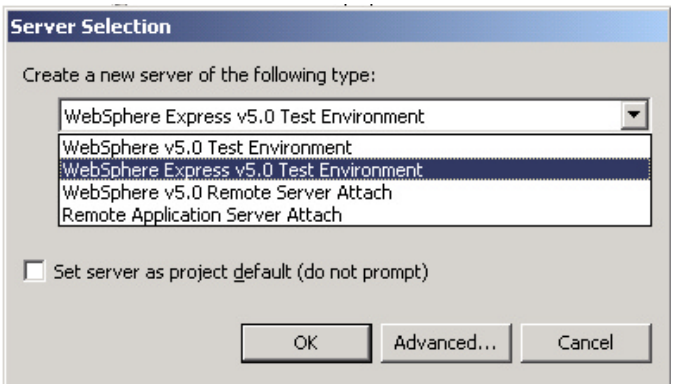
__ 1. **Using the Websphere Application Server Express V5.0 test environment to show the Index.html page**

? Right mouse click on the **wflabxx project** icon



✍ Select ***Run on server*** from the pop up menu

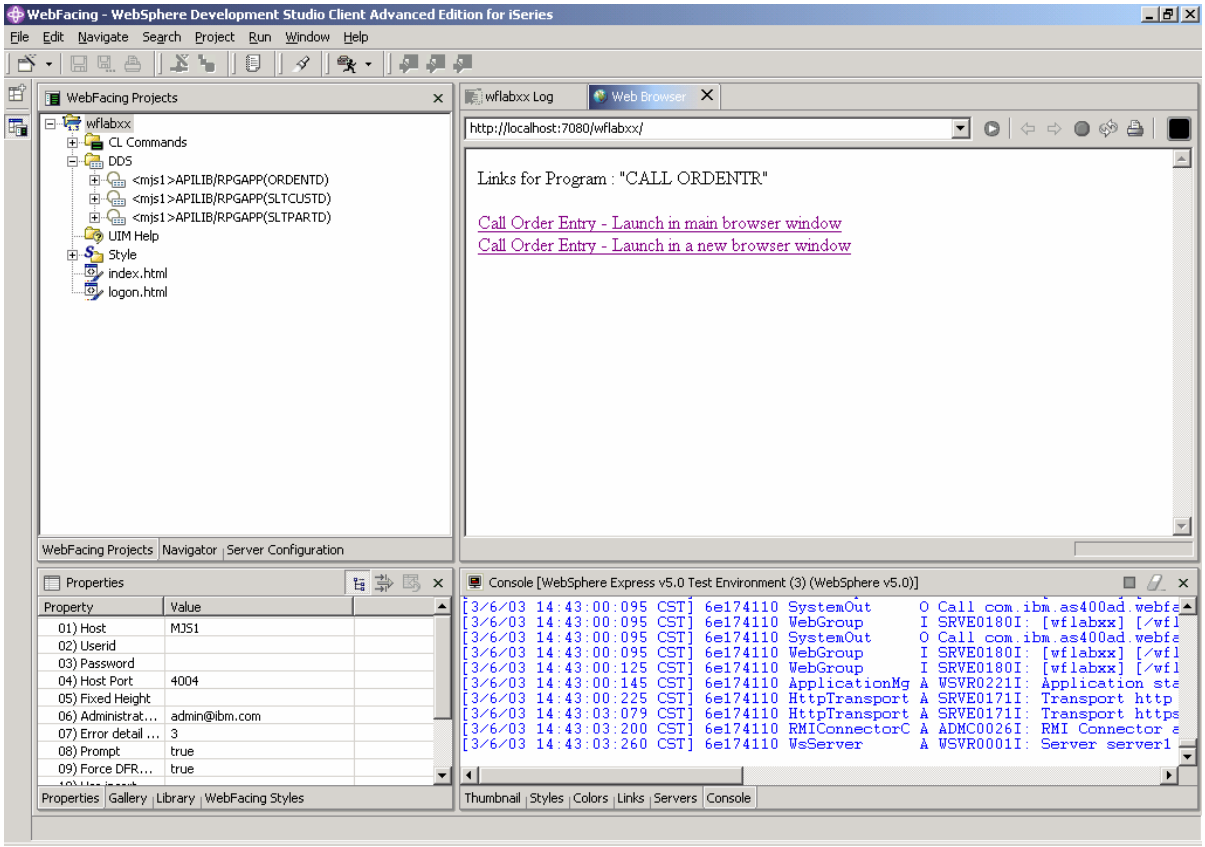
A pop up window will ask for you to chose which server you would like to run on. Select WebSphere Application Server Express v5.0 Test Environment. Click **OK**



After a few moments (be patient), the WebSphere application server will be started on your PC.

? The browser will appear in the right hand pane of the workbench

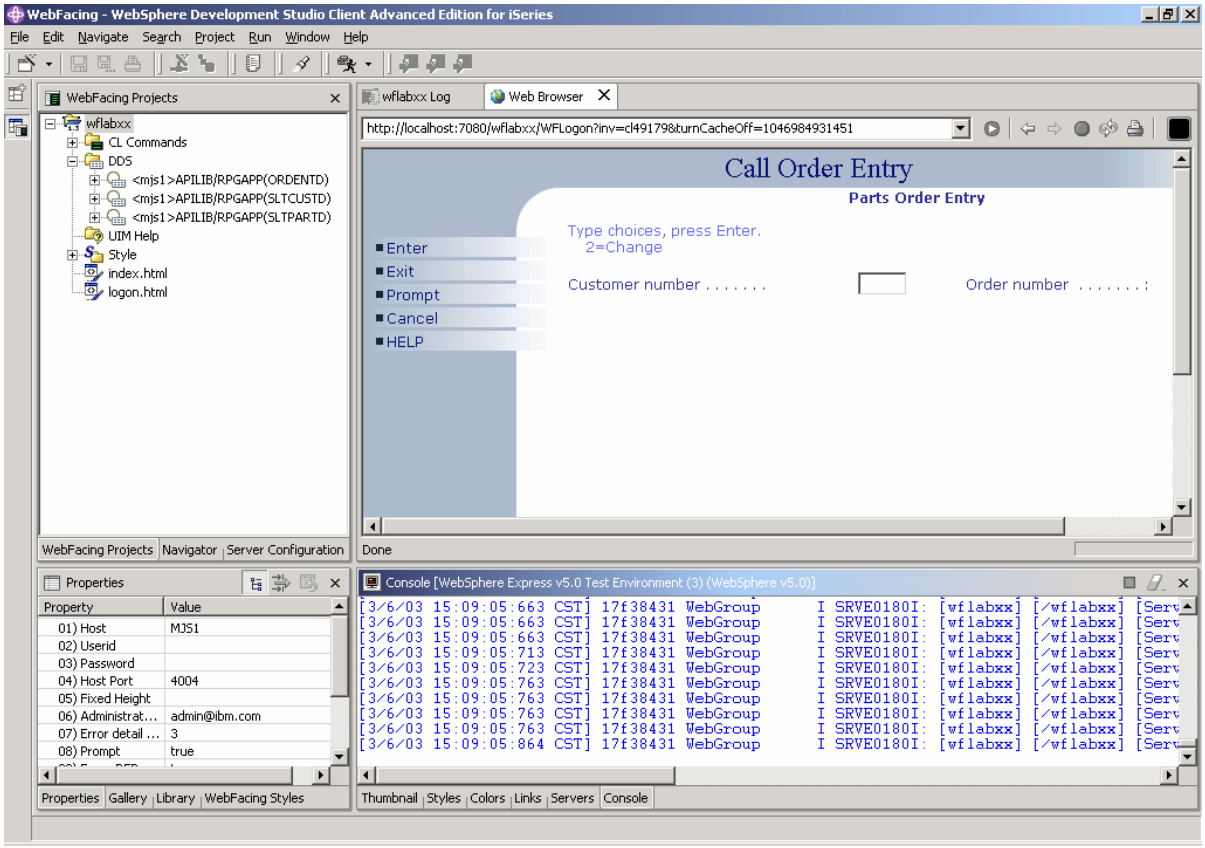
You will see the **index.html** page that has been generated by the WebFacing Tool. Notice that your perspective has been changed to Server Perspective.



? In your browser pane click on the top **Order Entry Application** link and sign in with your iSeries user name and password when prompted.

? After a few moments you will see the following screen. (*Keep in mind the first time the JSPs is requested it has be compiled into a Servlet, if you run the application a second time you will see performance is improved*)

? You will see the first WebFaced screen of your application.



Press the **Prompt** push button

Select a **customer** from the pop-up window (subfile)

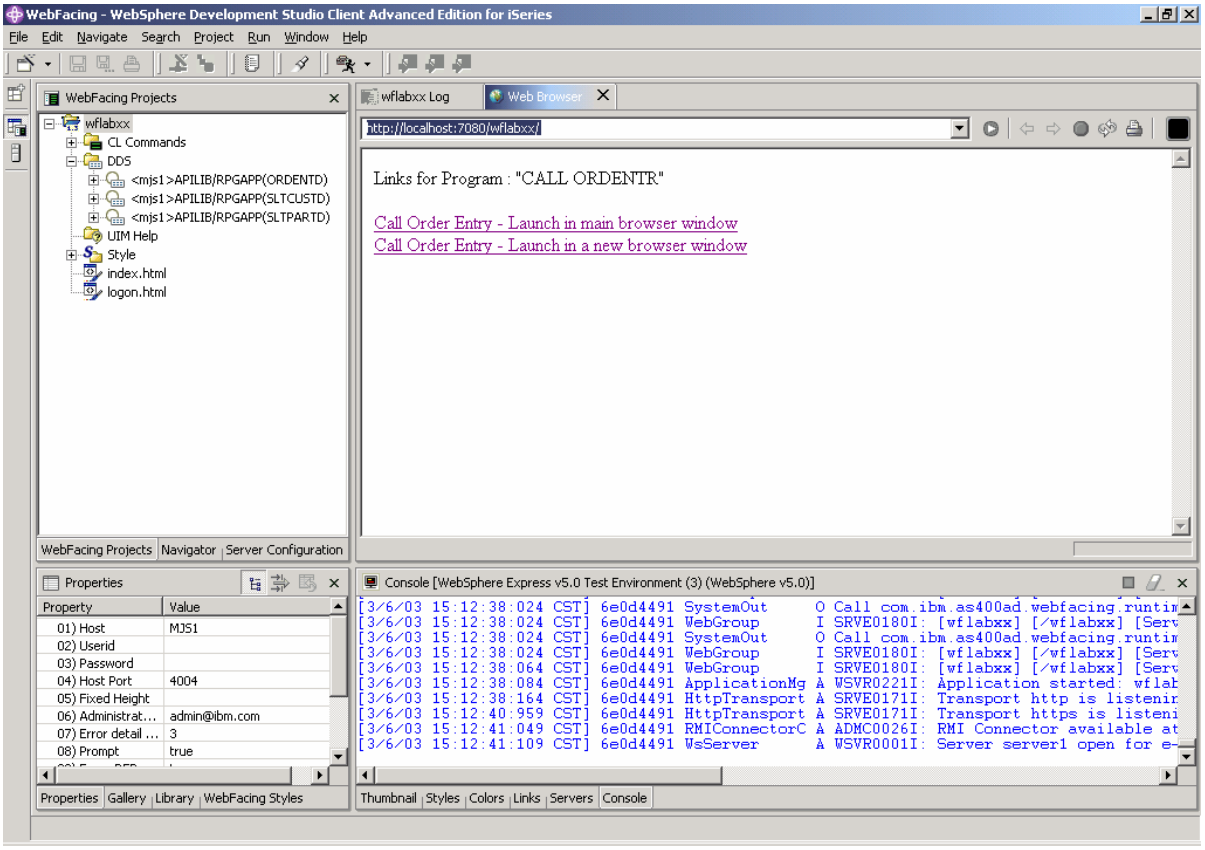
Go through the same steps as in **exercise 1** in the beginning of the Lab and try the different options to create an order.

5. Creating the Web Archive (WAR) file

In this exercise we describe how to a create WAR file, which will be used to deploy the application on WebSphere Applications Server Express V5.0.

__ 1. Go back to Web Facing Perspective from Server Perspective

Click on WebFacing Perspective icon in the left icon bar.



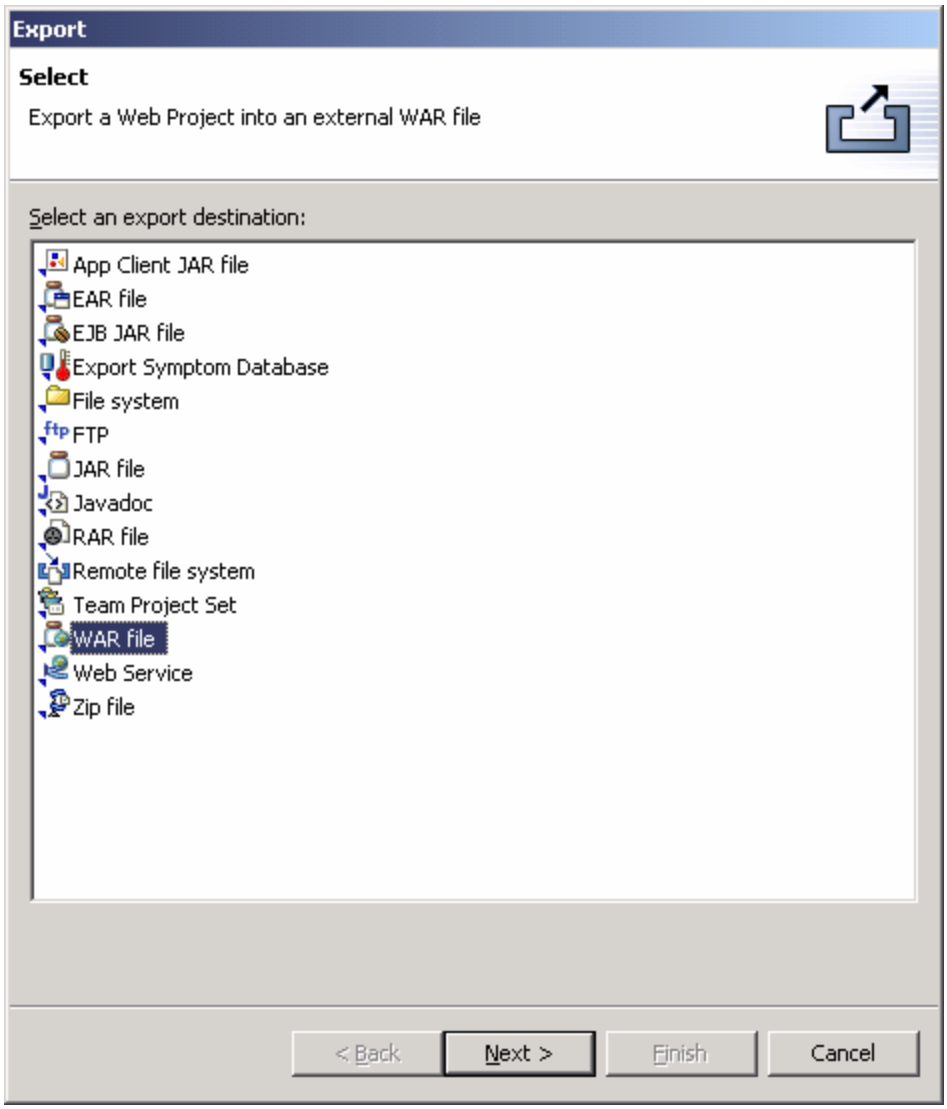
__ 2. Make sure you have mapped your iSeries as a Network Drive so that you can create the WAR files in your team directory on iSeries.

__ 3. Select **wflabxx** project under WebFacing Projects

From Menu option select **File -> Export**

__ 4. Select WAR file in Export window

(this is the **W**eb **AR**chive Format)



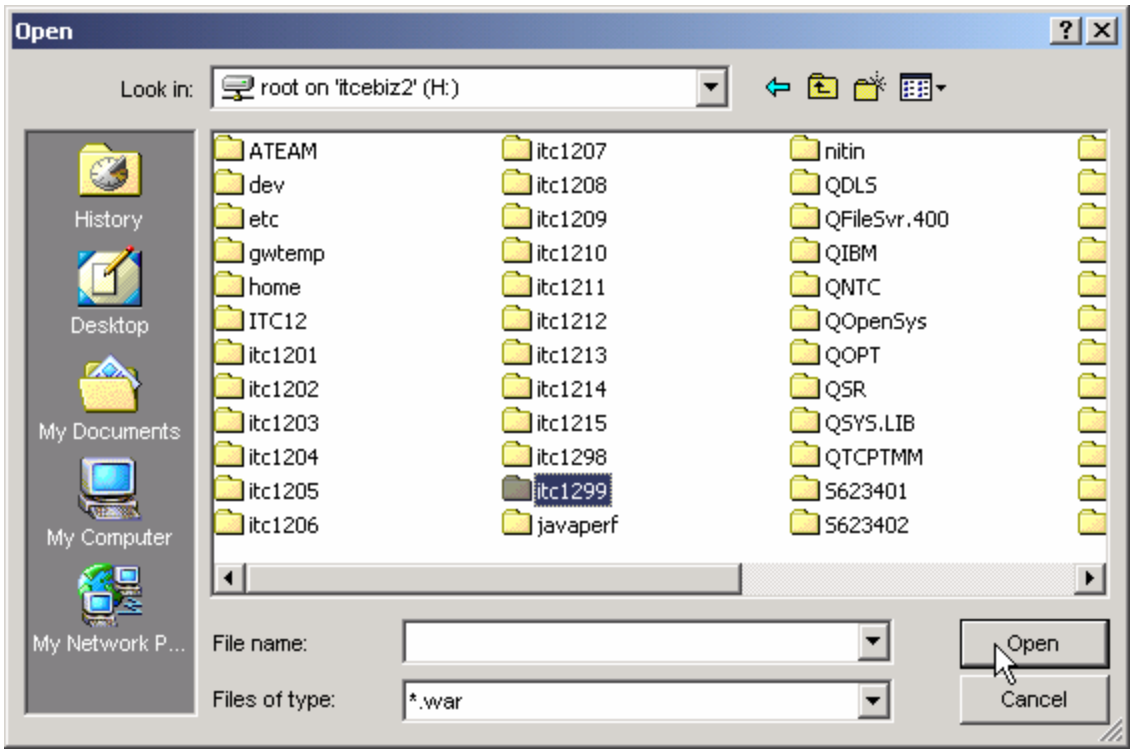
Click on Next button

__ 5. WAR Export

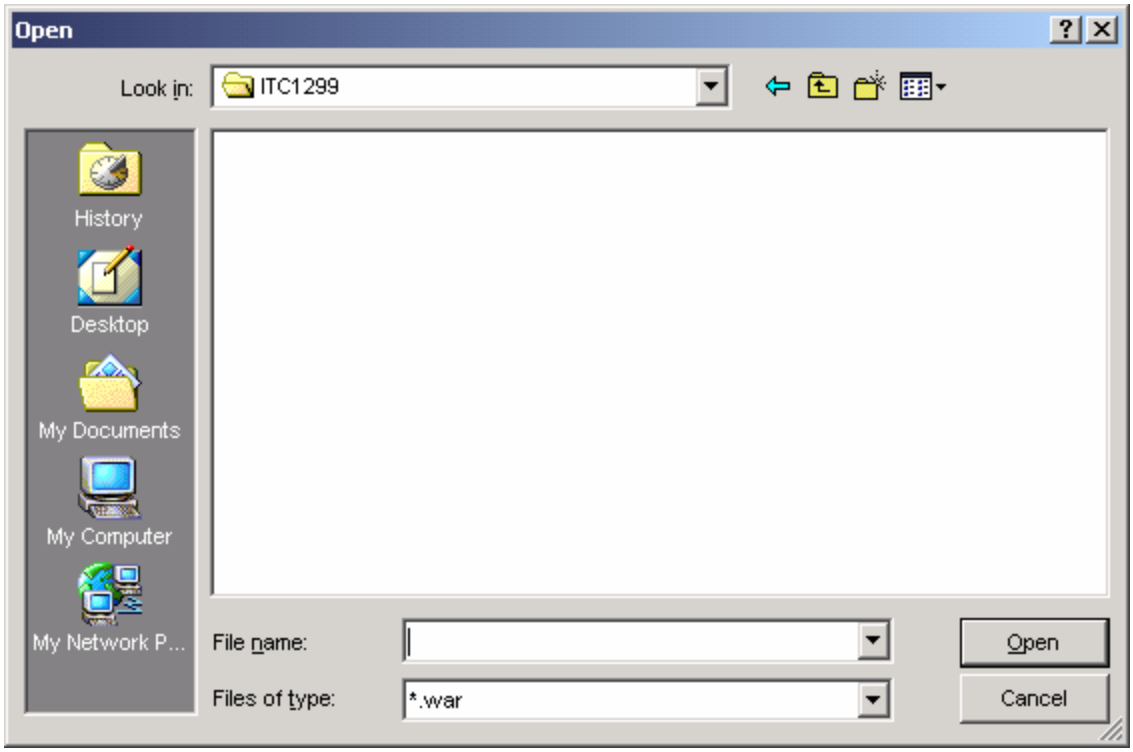
Select **wflabxx** for what resources do you want to export,

Click the **Browse** button to choose a location to export your project to.

Go to your team directory on iSeries System using mapped network drive from previous step.

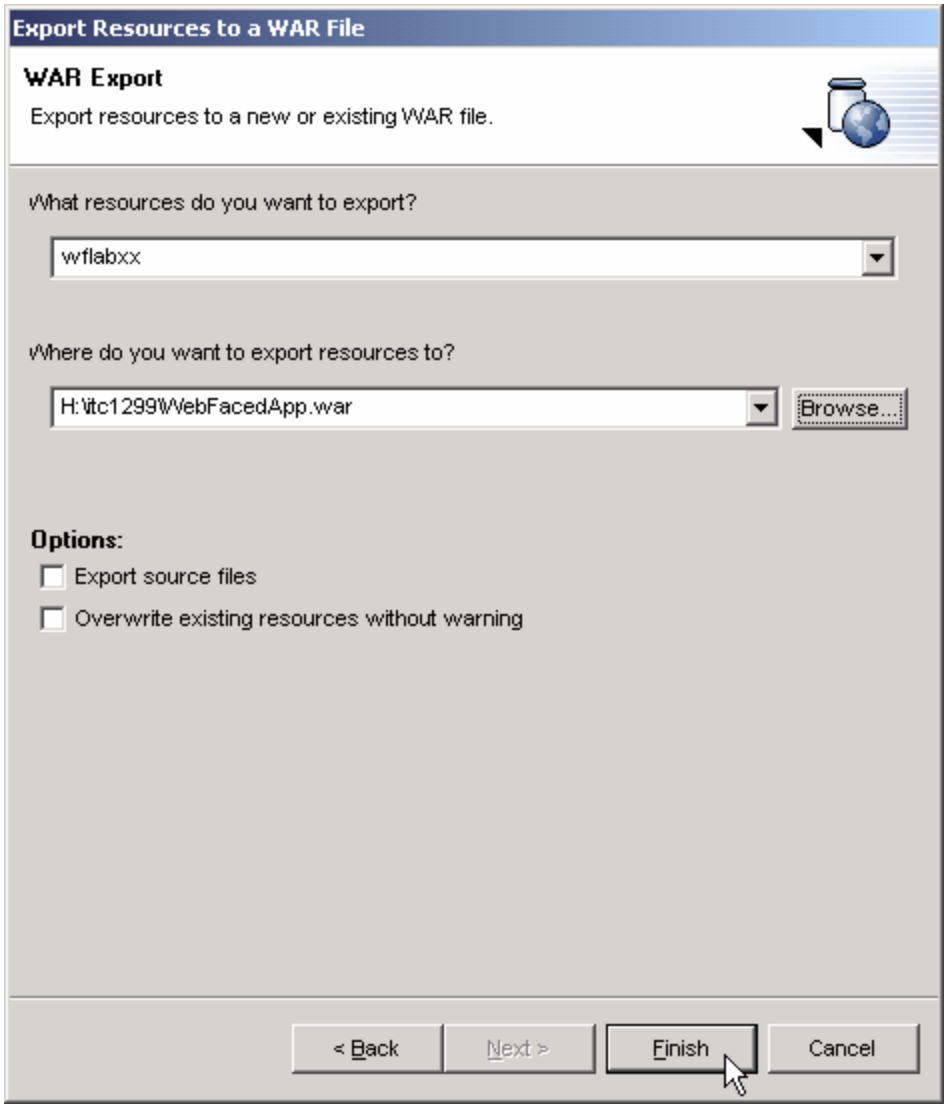


Select your **team directory** (Refer to Lab Information Sheet) and Click on open



Enter filename: **WebFacedApp** and click on Open

Back in WAR export window



Click on **Finish**.

This export to a WAR file will take a little while. It is copying the project information to your mapped drive, but also creating the descriptors and formatting required for a WAR file.

__ 6. **Validate what you just published on the mapped drive.**

If you do not have an **Windows Explorer** session going, **right mouse click** on the **Start** button (lower left hand corner of the laptop display), select **Explorer**. Or you

can click the icon that looks like this  on the bottom left edge of your PC display. Otherwise, just use the session you already have running.

Check your team directory to ensure that the WebFacedApp.war file is there.

6. Creating a WebSphere Application Server Express V5.0 Enterprise Application

Creating an Enterprise Application with the WebSphere Application Server Express V5.0 Admin interface

During this exercise you will start the WebSphere Application Server Express V5.0 Administrative Browser Console. The console allows you to manage your Websphere application server environment. The following tasks will be covered in this lab:

- Starting the admin. Browser console
- Navigating through the WebSphere Application Server Express V5.0 environment using the console
- Install the wflabxx WAR file as an Enterprise Application using the Wizard
- Starting the Application

As a result of this exercise, you will create the Enterprise Application needed to run your WebFaced user interface.

What You Should be Able to Do

As a result of this exercise you will learn how to use the **WebSphere Application Server Express V5.0 Browser Admin console.** You will be able to start it and gain an understanding of the different parts in the console. You will be able to go through all steps needed to define all pieces needed to run WebFaced applications in Websphere Application Server Express V5.0:

- Use the Websphere Application Server Express V5.0 browser console
- Navigate through the Console environment
- Use the Websphere Application Server Express V5.0 browser console and its Wizards to create an enterprise application needed to run the WebFaced application.
- Use the Websphere Application Server Express V5.0 browser console to start the application

__ 1. Starting the Websphere Application Server Express V5.0 Express browser Admin

To start the Websphere Application Server Express V5.0 Admin, open up a browser. To do this, look on the bottom left of your laptop and find an icon like this:

 for Internet Explorer (recommended, you can use Netscape, but don't resize the window in the middle of an activity, you risk loosing it). Click on it to bring up a browser.

When the browser comes up enter this URL:

http://<system_name>: 2001

- When prompted, enter your userid and password (Please refer to Lab Information Sheet)
- ***Click on IBM HTTP Server for iSeries*****,** IBM HTTP Serer for iSeries page should appear.
- ***Click on Manage tab*** and Select your Websphere Application Server Express V5.0 Express Server instance (**WASxx**) in the Server list box on the top

__ 2. Install WebFaced Application

- ***Click on Install New Application link*** in left navigation pane
- **Specify Application Location**
  - i. ***Select Application is Contained in a WAR file*** radio button
  - ii. **IFS Path of WAR file**
    1. ***Click on browse*** and navigate to your team directory i.e. ITC12xx
    2. ***Select WebFacedApp.war*** file created in the previous step
    3. ***Click on OK*** in the file browse window.
  - iii. **Context Root** input field enter **/wflabxx** (where xx is your team number). This is part of the URL for invoking the application from a browser. We will just point to the application itself.

Here is the screen shot for TEAM99

iv. Click on **Next**.

? **Provide Options to Perform Install**

i. Application Name: Enter **Web Faced Application** do not select Pre-Compile JSPs option (Take Default)
ii. **Click on Next**.

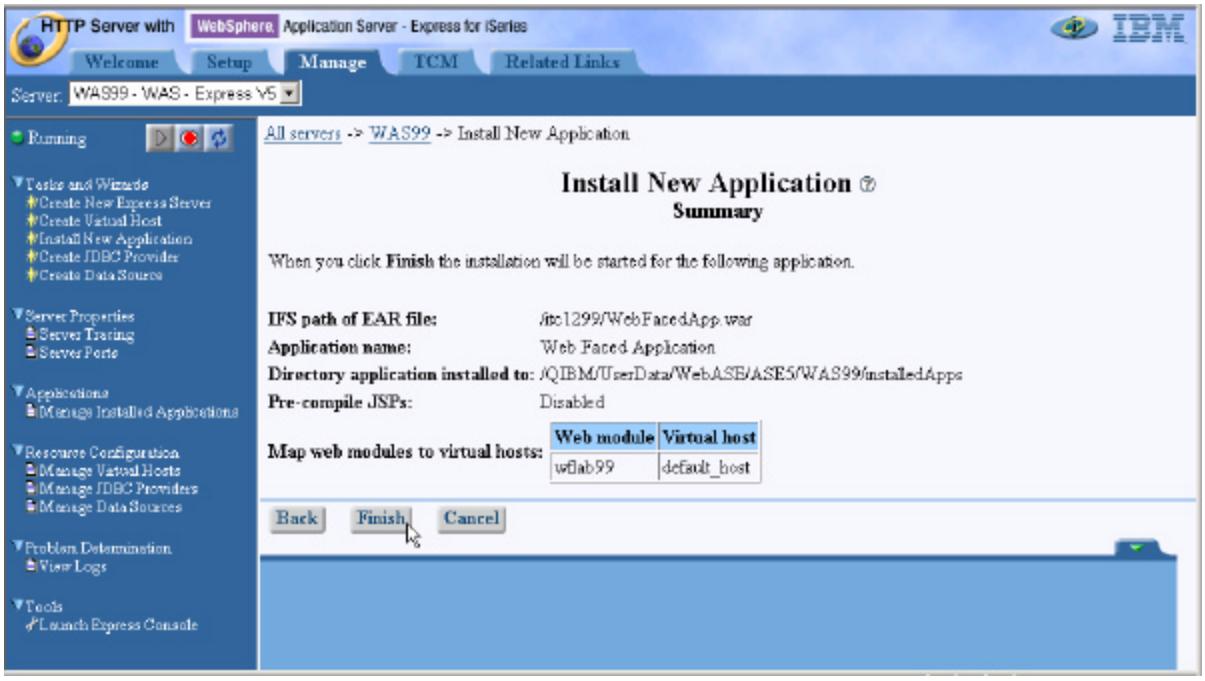
? **Map Virtual Hosts for Web Modules**

i. Virtual Host: Select **default_host** (already selected)

ii. **Click on Next**

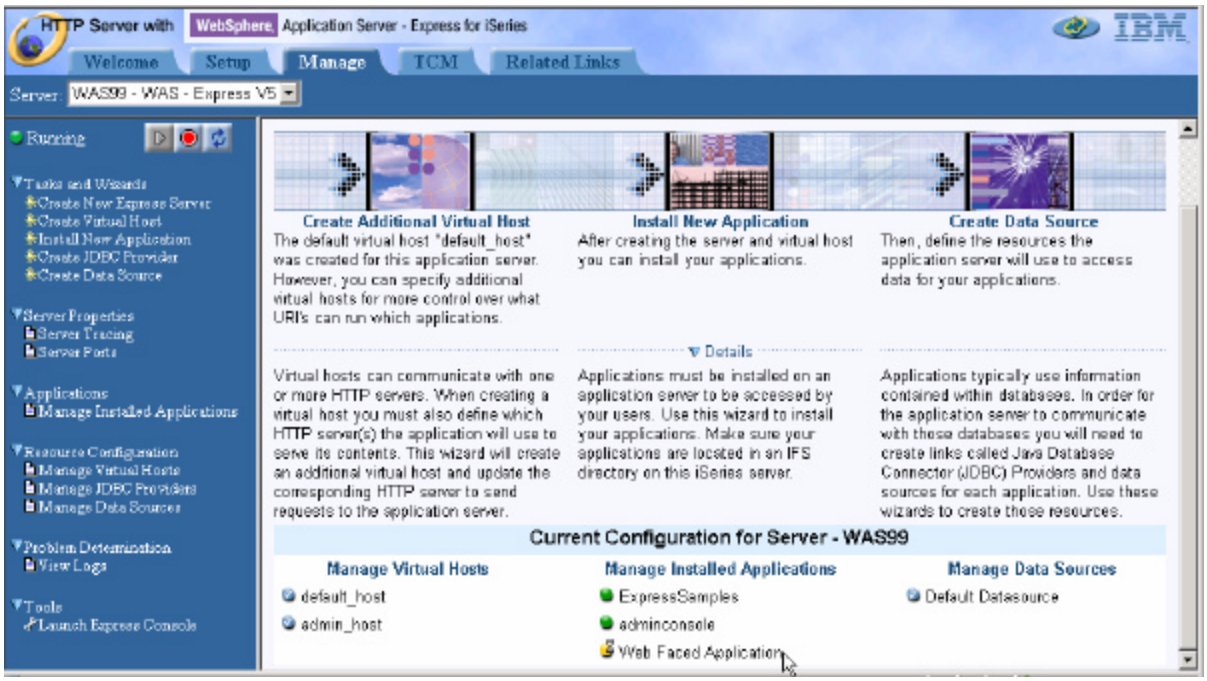
? **Summary**

i. Review the Summary

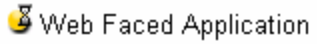


ii. Click on Finish

? **Wait until Application Installation is over ….**



Yellow dot with hour glass next to application name

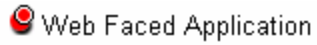


Indicates that it is currently installing the application.

Click on Manage Installed Applications under Applications in the left navigation pane.

Click on Refresh Button (

) in right navigation pane to refresh the status and wait until it turns to red dot.

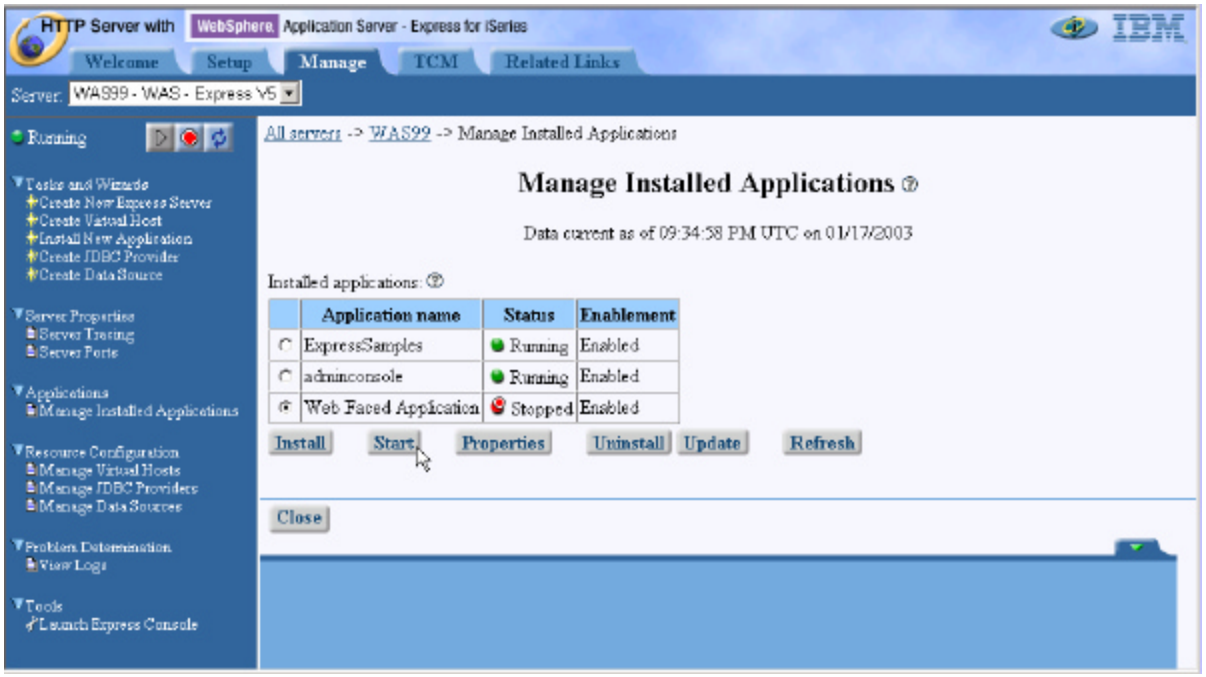


which indicates that Application Installed but currently in Stopped Status.

__ 3. Start WebFaced Application

? ***Click on Manage Installed Application link*** in left navigation pane

? ***Select Web Faced Application***

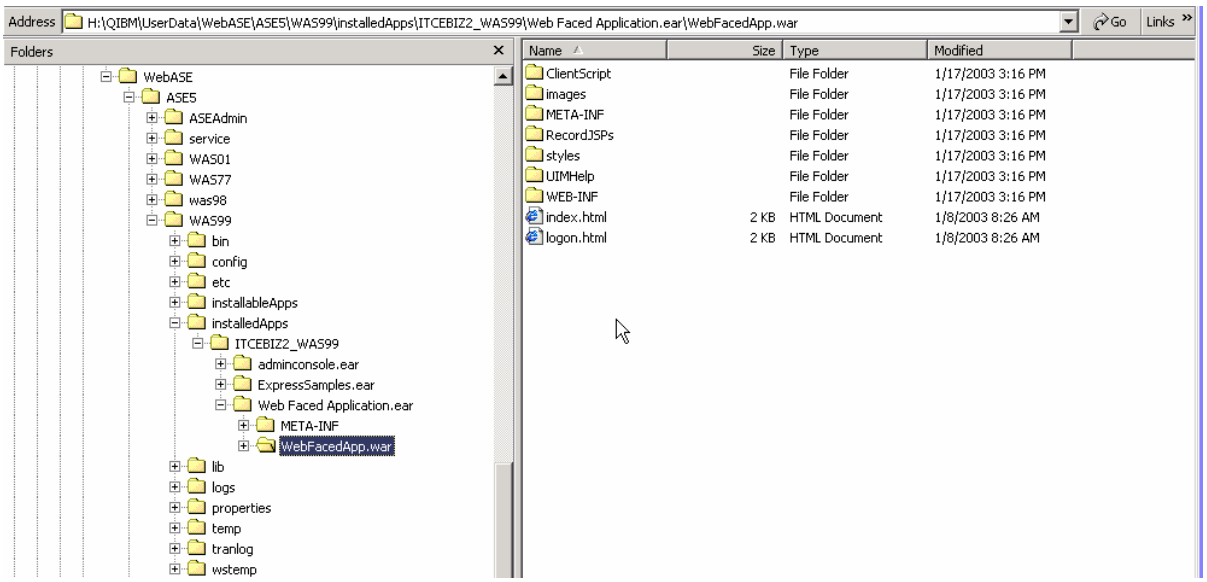


? ***Click on Start*** and wait until Status shows Running (Running).

__ 4. Application Components on the Server

Let's look at where the enterprise application ended up in your WebSphere instance files. Use your Windows Explorer to expand the IFS directories down to your instance.

/QIBM/UserData/WebASE/ASE5/WASxx/InstalledApps/<system_name>_WASxx/Web Faced Application.ear



We are now ready to test our application.

7. Running the WebFaced application

During this exercise you will start Internet Explorer, specify the URL to show the **index.html** page generated by the WebFacing tool. Then select the WebFaced application and start it. The following tasks will be covered in this lab:

- Starting Internet Explorer
- Specifying the correct URL to load the **Index.html** page
- Selecting the correct link to invoke the WebFaced application
- Using the WebFaced application

As a result of this exercise, you will point the browser to the Web application you just created. From the initial web page you will select the link created by the WebFacing conversion to invoke the WebFaced application.

What You Should be Able to Do

As a result of this exercise you will be able to invoke the web application in IE. You also will be able to start the WebFaced application and understand how to navigate through the converted User Interface.

- Use the Internet Explorer to point to the Web Application
- Select the Link specified in earlier exercises to invoke the RPG application
- Use the browser to step through the WebFaced application

__ 1. **Display Index page**

Use an Internet Explorer (recommended) browser to show the Index.html page (this is the preferred browser for the webfacing output.

Choose *Start✍ Programs✍ Internet Explorer* or use the shortcut 

The browser will appear on your desktop. Specify the following URL:

http://<system name>:60xx/wflabxx

Where the xx is your team number.

If the application server is running and the URL is correct you should see the **index.html** page that has been generated by the WebFacing program.

__ 2. **Testing the webfaced application**

✍Go to your browser window and click one of the **Order Entry** links,

✍If everything is in place you should get the first screen of your application.

Please note, the first time a screen is invoked, it is being compiled as a JSP. This takes time. Further accesses to the same screen should appear faster.

Select a **customer** from the subfile

Go through the same steps as in **exercise 1** in the beginning of the Lab and try the different options to create an order.

Congratulations, you have use the IBM WebFacing Tool to modernize your 5250 based RPG application and made it available on the web.