

WebFacing Lab Exercise 3

Packaging, Deploying and Testing a WebFaced Application within WebSphere Application Server – Express for iSeries

Overall Lab Guide

The objective of this lab to package the WebFaced Application and deploy it in WebSphere Application Server Express for iSeries. The Lab also shows how to install web application using the WebSphere Application Server – Express for iSeries administrative console.

Note: The pictures in these labs show a similar application being built. Some of the names and icons may be different from the environment you are working with.

The Steps in this Lab

- 1. Package the WebFaced Application
- 2. Creating a Enterprise Application in the WebSphere Application Server – Express for iSeries
- 3. Run the WebFaced application

1. Package the WebFaced Application

In this exercise we describe how to create WAR file, which will be used to deploy application on WebSphere Applications Server – Express for iSeries.

_____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 drive to iSeries Server so that you can create the WAR file in your user directory on iSeries.
- ____3. Select **WebFacedApp** project under WebFacing Projects

From Menu option select File -> Export

_____4. Select WAR file in Export window

(this is the Web AR chive format needed for WebSphere Application Server).

Export				
Select Export a Web Project into a	an external WAF	R file		Ċ
Select an export destinatio	n:			
EAR file File system File System AR file Remote file system UDDI WAR file Pile				
	< <u>B</u> ack	Next >	Finish	Cancel

Click on Next button

_____5. WAR Export

Select WebFacedApp for what resources do you want to export ?

Where do you want to export resources to?

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

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

Select your user directory and Click on open

Open						? ×
Look in:	🔄 userdir		•	🗢 🗈 💣 🎟 •		
History						
My Documents						
My Computer						
My Network P	File name:	WebFacedApp		•	Ope	en 🛛
	Files of type:	*.war		•	Can	cel

Enter filename: **WebFacedApp** and click on Open Back in WAR export window

Export Resources to a W/	AR File				
WAR Export Export resources to a new	or existing WAR	file.			_
What resources do you wa	nt to export?				
WebFacedApp					•
Where do you want to expo	rt resources to?				
F:\userdirWVebFacedApp	o.war			-	Browse
Options:	ources without w	varning			
	< <u>B</u> ack	Next >	Eini	^{sh}	Cancel

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 user directory on to ensure that the WebFacedApp.war file is there.

2. Creating a WAS Enterprise Application

Creating an Enterprise Application with the WAS Admin interface

During this exercise you will start the WAS 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 WAS environment using the console
- Install the WebFacedApp 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 **WAS 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 WAS:

- Use the WAS browser console
- Navigate through the Console environment
- Use the WAS browser console and its Wizards to create an enterprise application needed to run the WebFaced application.
- Use the WAS browser console to start the application

____1. Starting the WAS Express browser Admin

To start the WAS 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://<iSeries_system_name>: 2001

- When prompted, enter your iSeries userid and password
- Click on IBM WebSphere Application Server Express for iSeries, IBM WebSphere Application Server Express for iSeries page should appear.
- Click on Manage tab and Select your WAS Express Server instance (WASEXP) in the Server list box on the top

Address	🙆 http://iseriesa::	2001/HTTPAdmir	ı		
HT	TP Server with	WebSphere.	Application Serve	er - Express for	iSeries
	Welcome	Setup	Manage	TCM	Re
Server:	All servers		-		
▼Tasks *Crea *Crea *Mig ©Crea	All servers ADMIN - Apache APACHEDFT - A DEFAULT - Orig QIPPSVR - Apa WASEXP - WAS	e ∖pache inal che S - Express ∨	5		I
	WEBSERVER -	Apache	13	Server 🔺	

____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 user directory
 - 2. Select WebFacedApp.war file created in the previous step

🚰 File Browse - Microsoft Internet Explorer 💶 🗖	×
DOIBM	•
DONTC	
DQOPT	
DQOpenSys	
₽QSR	
DQSYS.LIB	
DQTCPTMM	
■S623499	
►S6295	
▶WAS40AEsDocs	
DWASSCR	
Din	
🖹 boats.savf	
Dev	
Detc	
▶home	
lockTrace	
Dtmp	
🖬 userdir	
🖹 WebFacedApp.war	
▶usr	
D ▼5r2	
D wildfire	
Dwww	•
OK Cancel	

- 3. Click on OK in file browse window.
- **iii.** Context Root input field enter /WebFacedApp this is part of the URL for invoking the application from a browser. We will just point to the application itself.

Address 🕘 http://iseriesa:2001/HTTPA	dmin 🗹 🗟 🗟	,
Welcome Setup Server: WASEXP - WAS - Express	ere. Application Server - Express for iSeries Manage TCM Related Links IEIN s V5 • •	
Running Tasks and Wizards *Create New Express Server *Create Virtual Host *Install New Application *Create JDBC Provider *Create Data Source	Welcome to the Install New Application wizard. This wizard will install an application into this WebSphere Application Server - Express. The application must already exist on the iSeries server in an IFS directory. C Application is contained in an EAR file © Application is contained in a WAR file	
▼Server Properties ■Server Tracing ■Server Ports	IFS path of WAR file: //userdir/WebFacedApp.war @ Browse @	
▼Applications ■Manage Installed Applications	Context root: WebFacedApp 🕜	
 ✓ Resource Configuration ▲ Manage Virtual Hosts ▲ Manage JDBC Providers ▲ Manage Data Sources ✓ Problem Determination ▲ View Logs 	Back Next Cancel	-
Milling http://iseriesa:2001/Next	Eccal intranet	1

iv. Click on Next.

- Provide Options to Perform Install
 - i. Application Name: Enter **WebFaced Application** do not select Pre-Compile JSPs option (Take Default)

Address 🙋 http://iseriesa:2001/HTTPA	dmin 🗾 🖉 🧭 G	0
Welcome Setup	ere. Application Server - Express for iSeries	
Server: WASEXP - WAS - Expres	is V5 🔽	
🔋 Running 🛛 💽 💽 🏄 🌥	<u>All servers</u> -> <u>WASEXP</u> -> Install New Application	-
▼Tasks and Wizards *Create New Express Server *Create Virtual Host *Install New Application	Install New Application [®] Provide Options to Perform the Install	
₩Create JDBC Provider ₩Create Data Source	Specify application deployment options	
▼Server Properties ■ Server Tracing ■ Server Ports	Application name: WebFaced Application ⑦ Directory application installed to: /QIBM/UserData/WebASE/ASE5/WASEXP/installedApps □ Pre-compile JSPs ⑦	
▼Applications ■Manage Installed Applications	Note: Pre-compiling JSPs can have significant performance impacts. When enabled, the JSPs in the application will be compiled at installation time, causing the application install to take longer. When disabled, the JSPs will be compiled the first time they are accessed, causing the first use of	
 ▼Resource Configuration ■ Manage Virtual Hosts ■ Manage IDEC Providers ■ Manage Data Sources 	Back Next Cancel	
VProblem Determination		
ë	E Local intranet	//

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

Address 🗃 http://iseriesa:2001/HTTPAd	lmin		▼ ∂Go
Welcome Setup	IBM,		
Server: WASEXP - WAS - Express	s V5 🔽		
Running	this application server. However, you can specify additional virtual hosts for more control over what URI's can run which applications. Virtual hosts can communicate with one or more HTTP servers. When creating a virtual host you must also define which HTTP server(s) the application will use to serve its contents. This wizard will create an additional virtual host and undate the	applications. ▼ Details Applications must be installed on an application server to be accessed by your users. Use this wizard to install your applications. Make sure your applications are located in an IFS directory on this iSeries server.	Applications typically use information contained within databases. In order for the application server to communicate with those databases you will need to create links called Java Database Connecte (IDBC) Providers and
▼Applications ■Manage Installed Applications	corresponding HTTP server to send requests to the application server.		data sources for each application. Use these wizards to create those resources.
Resource Configuration	Current	Configuration for Server - V	VASEXP
Manage JDBC Providers Manage Data Sources	Manage Virtual Hosts	Manage Installed Applications	Manage Data Sources
VProblem Determination -	🥝 default_host	🕒 ExpressSamples	🥥 Default Datasource
Uiew Logs	🧐 admin_host	鱼 adminconsole	
	e -	🗳 WebFaced Application 🔓	

Yellow dot with hour glass next to application name

🗳 Web Faced Application

Indicates that it is currently installing the application.

Click on Refresh Button (20) in left navigation pane to refresh the status and wait until it turns to red dot.

SWeb Faced Application

This indicates that Application is Installed but currently in Stopped Status.

- _____3. Start WebFaced Application
 - Click on Manage Installed Application link in left navigation pane
 - Select Web Faced Application

Address 🙆 http://iseriesa:2001/HTTPAc	dmin							• @@
Welcome Setup Server: WASEXP - WAS - Express	re Ap s ∨5	plication Server - Express for Manage TCM	iSeries Related	Links			١	BM
🔍 Running 🛛 🖸 🖉 📥	<u>A11 s</u>	ervers -> <u>WASEXP</u> -> 1	Manage Insta	lled Applicatio	ons			
▼Tasks and Wizards ★Create New Express Server ★Create Virtual Host ★Install New Application ★Create JDBC Provider ★Create Data Source	1	Ma Data	nage In	f 04:14:26 PM	Applicat	ions		
Worease Data bource	Insta	alled applications: ⑦			I			
VServer Properties		Application name	Status	Enablement				
Server Ports	C	ExpressSamples	🖲 Running	Enabled				
W A	O	adminconsole	🖲 Running	Enabled				
 Applications Manage Installed Applications 	C	WebFaced Application	Stopped	Enabled				
 ▼Resource Configuration ■ Manage Virtual Hosts ■ Manage JDBC Providers ■ Manage Data Sources 	Ins	tall Start Pr	operties	Uninstall	Update	Refresh		
VProblem Determination								
View Logs	Cle	ose						
								~

• 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/WASEXP/InstalledApps/<system_name>_WAS EXP/WebFaced Application.ear

×	Name 🛆	Size	Туре	Modified
🗄 💼 WebFaced Application.ear 🔺			File Folder	2/21/2003 10:12 AM
🗄 🧰 META-INF	images 🔁		File Folder	2/21/2003 10:12 AM
🖻 🔄 WebFacedApp.war	META-INF		File Folder	2/21/2003 10:12 AM
	RecordJSPs		File Folder	2/21/2003 10:12 AM
	📄 styles		File Folder	2/21/2003 10:12 AM
	📄 UIMHelp	N	File Folder	2/21/2003 10:12 AM
E RecordJSPs	📄 WEB-INF	43	File Folder	2/21/2003 10:12 AM
🗄 🔂 styles	index.html	2 KB	HTML Document	2/20/2003 4:58 AM
🕀 🛄 UIMHelp	🐔 logon.html	2 KB	HTML Document	2/20/2003 4:57 AM
É Ci WEB-INF				

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 \rightarrow Programs \rightarrow Internet Explorer or use the shortcut

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

http://<system name>:59900/WebFacedApp

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.

Address 🕘 http://iseriesa:59900/WebFacedApp/	
Links for Program : "CALL ORDENTR"	
<u>Order Entry Application - Launch in main browser window</u> Order Entry Application - Launch in a new browser window	

____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.

Address 🙆 http://iseriesa:5	39900/WebFacedApp/WFLogon?inv=cl848531&turnCacheOff=1045852810836	∂Go
	Order Entry Application	▲
WebFacing	Type choices, press Enter. 2=Change	
Enter Exit Promot		
Cancel HELP		
		-

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.

Press the Prompt push button or F4 in Customer number field

Did you receive an Application Error? – WF0116 – The encoding check field was received incorrectly by the Application Server

Go to page titled "Enabling Client Encoding for WebSphere Application Server – Express for iSeries".

Address 🙆 http://iseriesa:5	59900/WebFacedApp/WFLogon?inv=cl848531&turnCacheOff=1045854519018	▼ ∂⊙
	Order Entry Application	<u>^</u>
	Parts Order Entry	
Enter Cancel HELP	Parts of definition Type choices, press Enter. 2=Change Customer number Select Customer Type choices, press Enter. 1=Select Opt Customer BLANKERTZ, Wilfried RASANEN, Pentti S NARTOVICH, Aleksandr PAQUAY, Camille E FAIRALL, David WILLIS, Janet Y OAKLEY, Annie R ASCHEMAN, Dean NUUTINEN, Petri WILLIS, Neil	
		•

Select a **customer** from the pop-up list (Sub-file)

Address 🕘 http://iseriesa:59900/WebFacedApp/WFLogon?inv=cl848531&turnCacheOff=1045854519018 Order Entry Application Parts Order Entry Type choices, press Enter. 2=Change WebFacin Select Part Customer number Type choices, press Enter. 1=Select Customer name : Address City: Opt Part Description Qty 192 1 000001 WEBSPHERE REDBOOK Opt Part Description 15 000002 Radio_Controlled_Plane 000003 Change_Machine 45 000004 Baseball_Tickets 904 000005 Twelve_Num_Two_Pencils 1,762 000006 Over_Under_Shotgun 1,331 000007 Feel_Good_Vitamins 21 000008 Cross_Country_Ski_Set 62 000009 Rubber_Baby_Buggy_Wheel 79 000010 ITSO REDBOOK SG24-2152 331 🖵

Press the Prompt push button or F4 in Part number field

Select Product from Product the pop-up list (Sub-file)

Change quantity to 1 or 2.

Order details:

Address 🙋 http://iseriesa:5	9900/WebFacedApp/WFLogon?inv=cl848531&turnCac	heOff=1045854519018		▼ ∂‰
	Order E	ntry Application		<u> </u>
		Parts Order Entry		
WebFacing	Type choices, press Enter. 2=Change			
Enter Exit	Customer number Customer name : Address :	0001 Order number BLANKERTZ, Wilfried 00001 Ave, ABC		3527
Accept Order n	City:	Frankfurt	IO 55901	
Cancel	Opt Part Description	Qty		
		ок		1
				•

Accept the order by pressing Accept Order or F6 key.

You have successfully tested the WebFaced Application within WebSphere Application Server Express for iSeries!!!

Enabling Client Encoding for WebSphere Application Server – Express for iSeries

Address 🧃 http://iseriesa:59900/WebFacedApp/WFLogon?inv=cl848531&turnCacheOff=1045852810836	▼ @Go
Order Entry Application	•
! Application Error	
The following error occurred while the application was running : WF0116: The encoding check field was received incorrectly by the application server. This is likely caused by t data transferred from the browser to the application server not being encoded in UTF-8. Please refer to the WebF documentation about how to set up UTF-8 client encoding in WebSphere Application Server. If you would like assistance, click <u>here</u> to contact the administrator. To return to the page you were at prior to beginning the application, click <u>here</u> .	he acing
Additional information : Administrative message is not available. Details :	

The WebFacing Tool creates Web applications with multiple language support. Because languages use different character sets, data streams between the browser and WebSphere Application Server (WAS) are UTF-8 encoded. For WebFacing to work correctly, UTF-8 support must be configured in the WAS administrative console.

We need to set following system property (same as WDSc WAS Test Environment Setting)

client.encoding.override = UTF-8

Address 🗃 http://iseriesa:2001/HTTPAdmin →
∂Go HTTP Server with WebSphere. Application Server - Express for iSeries Setup Manage TCM Related Links Welcome Server: WASEXP - WAS - Express V5 💌 All servers -> WASEXP -> Manage Installed Applications ▼Tasks and Wizards *Create New Express Server *Create Virtual Host Manage Installed Applications [®] ✤Install New Application ✦Create JDBC Provider Data current as of 05:55:22 PM UTC on 02/21/2003 *Create Data Source Server Properties
 Server Tracing Installed applications: ⑦ Server Ports Application name Status Enablement 🛯 Running Enabled C ExpressSamples ⁷Applications ■Manage Installed Applications C adminconsole Sunning Enabled ▼Resource Configuration ■ Manage Virtual Hosts ■ Manage JDBC Providers ■ Manage Data Sources Properties Uninstall Update Refresh Install Stop VProblem Determination 🖹 View Logs Tools Tools F Launch Express Console Close . *

Go back to HTTP Admin. Configuration browser window:

Click on Launch Express Console ... enter your iSeries userid when prompted and do the following steps:

____1. Navigate down as follows:

Expand Servers (Click on + sign)

Click on Application Servers

Click on your instance WASEXP in right hand side pane.

Scioli down and Cick on i rocess Demilion under Additional i ropentes	Scroll down and	Click on	Process	Definition	under	Additional Properties
--	-----------------	----------	---------	------------	-------	-----------------------

Additional Properties	
<u>VVeb Container</u>	Specify thread pool and dynamic cache settings for the container . Also, specify session manager settings such as persistence and tuning parameters, and HTTP transport settings.
Logging and Tracing	Specify Logging and Trace settings for this server.
ORB Service	Specify settings for the Object Request Broker Service.
Custom Properties	Additional custom properties for this runtime component. Some components may make use of custom configuration properties which can be defined here.
Administration Services	Specify various settings for administration facility for this server, such as administrative communication protocol settings and timeouts.
Diagnostic Trace Service	View and modify the properties of the diagnostic trace service.
Debugging Service	Specify settings for the debugging service, to be used in conjunction with a workspace debugging client application.
IBM Service Logs	Configure the IBM service log, also known as the activity log.
Server Components	Additional runtime components which are configurable.
Process Pefinition	A process definition defines the command line information necessary to start/initialize a process.
Performance Monitoring Service	specify settings for performance monitoring, including enabling performance monitoring,

Click on Java Virtual Machine under Additional Properties

Scroll down and Click on Custom Properties

Click on New and Enter following property (Please note that the entries are case sensitive)

Name: client.encoding.override

Value: UTF-8

Application Ser New	<u>vers</u> > <u>WASEXP</u> > <u>Process Definition</u> > <u>Java Vi</u>	rtual Machine > <u>Custom Properties</u> >
Specifies arbitra used to set inter	ary name/value pairs of data, where the name is a p nal system configuration properties. 🚺	property key and the value is a string value which can be
Configuration	1	
General Pro	perties	
Name	* client.encoding.override	Specifies the name (or key) for the property.
Value	* UTF-8	Specifies the value paired with the specified name.
Description		Provides information about the name-value pair.
Apply O	K Reset Cancel	

Click on OK button.

Note the message stating that:

lessage(s)
Changes have been made to your local configuration. Click <u>Save t</u> o apply changes to the master configuration.
The server may need to be restarted for these changes to take effect.
ντ.

Click on save to apply changes to the master configuration.

<u>Application Servers > WASEXP > Process Definition > Java Virtual Machine ></u> Save
Save your workspace changes to the master configuration
Save to Master Configuration
Click the Save button to update the master repository with your changes. Click the Discard button to discard your changes and begin work again using the master repository configuration. Click the Cancel button to continue working with your changes.
Total changed documents: 1
Save Discard Cancel

Click on Save to Save to Master Configuration

Click on Logout and close the browser window.

3. Re-start your WebSphere Express Instance

Since we have changed the configuration of the WebSphere Application Server, it needs to be re-started.

Go back to HTTP Admin browser window.

Stop your WebSphere Instance by clicking on Stop Button (

Hit refresh to check the status is Stopped:



Click on Start button to start the instance:



Go back and test the web faced application again.