3/1/03



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The objective of this lab is to create a new instance of WebSphere Application Server - Express for iSeries (alias WAS Express).

The results of this lab will be built upon in the next student exercise associated with this course, as well as be reused in the WebFacing Tool Distance Learning Course.

The creation of a new instance of a WebSphere Application Server is a basic administration task, and one that should be able to be performed by both developers and web masters alike. It is expected that multiple application servers will typically be created on a single iSeries system, for use in development, test and production environments.

This Lab has the following steps:

- 1. Open a 5250 Emulation Session
- 2. Ensure that the UserID being used for the lab has the required OS/400 authorities
- 3. Ensure that the WebSphere Application Server Express for iSeries subsystem is operational
- 4. Ensure that the HTTP Server Administration TCP/IP Service is operational
- 5. Use the iSeries Integrated Browser Interface to create a new instance of WAS Express and a related external HTTP Server Powered by Apache
- 6. Explore the set of WAS Express services that are available via the Integrated Browser Interface
- 7. Enable and start the full function WebSphere Application Server Administrative Console
- 8. Configure the new WAS Express instance to enable multiple language encodings (This is required for successful use of the WebFacing Runtime).
- 9. Regenerate the HTTP server plugin from the full function administrative console
- 10. View the iSeries Job Information (Optional Step)
- 11. View the WebSphere Application Server Log Information (Optional Step)

Note that the instance names and port numbers used in this lab are only examples.

Please check with your local iSeries System and e-Business Application Administrators to ensure that you do not attempt to duplicate resources already in use.

- HTTP Server Powered by Apache– Instance name WEBSERVER, Port # 59900 - WebSphere Express – Instance name WASEXP, Ports #59901-59912

- 1. Open a 5250 Emulation Session
 - ____1. If you already have a **Personal Communication Session icon** created on your workstation desktop for your target iSeries system, then **double click** on it and **go to step 2.**

Or

- Press the **Start** button on the task bar
- Choose Start→ Programs→ IBM Personal Communications→ Start or Configure a session.
 - Click on **Configure**
 - On the customize Communication dialog
 - Choose AS/400 as Type of Host

	nication		
elect Connection	n to Host		
ype of Host:	AS/400	•	
terface:	LAN	•	
ttachment:	Telnet5250 over TC	РЛР	•
	Link Parameters	. Session Parame	ters
	Link for an an otor 5		
onnection Overv	view		
Int	erface	Attachment	Type of Host
	<u> 23</u>	ТСРИР	
			وليبلب
	LAN	Telnet5250 over TCP/IP	AS/400
- This connec	LAN tion provides access to ar	Telnet5250 over TCP/IP	AS/400
- This connec interface. Su backup host is	LAN tion provides access to ar pport for Service Location s also provided.	Telnet5250 over TCP/IP n IBM AS/400 host over a TCP/IP network us n Protocol, SSL V3 secure layer encryption, I	AS/400
- This connec interface. Su backup host is - This selectio supports a W	LAN tion provides access to ar pport for Service Location s also provided. in is used in networks that indows Sockets V1.1 inter	Telnet5250 over TCP/IP n IBM AS/400 host over a TCP/IP network us i Protocol, SSL V3 secure layer encryption, I t typically run TCP/IP protocols. Requires a T	AS/400 sing TN5250 load balancing and CP/IP stack that
- This connec interface. Su backup host is - This selectio supports a W	LAN tion provides access to ar pport for Service Location s also provided. In is used in networks that indows Sockets V1.1 inter	Telnet5250 over TCP/IP n IBM AS/400 host over a TCP/IP network us Protocol, SSL V3 secure layer encryption, t typically run TCP/IP protocols. Requires a T rface.	AS/400 sing TN5250 load balancing and CP/IP stack that
- This connec interface. Su backup host is - This selectio supports a W	LAN tion provides access to ar pport for Service Location s also provided. In is used in networks that indows Sockets V1.1 inter	Telnet5250 over TCP/IP n IBM AS/400 host over a TCP/IP network us i Protocol, SSL V3 secure layer encryption, I t typically run TCP/IP protocols. Requires a T rface.	AS/400 sing TN5250 load balancing and CP/IP stack that

• Press the Link Parameters... push button

Telnet5250			×
Host Definition Auto	matic Host Location Advanced S	ecurity Setup	
	Host Name or IP Address	LU or Pool Name	Port Number
Primary	iseriesa		23
Backup 1			23
Backup 2			23
Auto-reconnect Enable Security			
		OK Cancel	Apply Help

- Type your iSeries host name or IP address into the Primary entry field
- Press the **OK** push button on the **TelNet5250** dialog
- Press the **OK** push button on the **Customize Communication** dialog
- ____2. You should see an iSeries 5250 emulation window with the sign on screen appear on your desktop.

Sign on using your iSeries User ID and password.

- 2. Ensure that the UserID being used for the lab has the required OS/400 authorities
 - __1. Use the DSPUSRPRF command to verify that the UserID being used to complete the lab has *IOSYSCFG, *ALLOBJ, *JOBCTL and *SECADM Special Authorities.

© Session A - [24 x 80]	
File Edit View Communication Actions Window Help	
Display User Profile - Basic	
User profile . 🤉 ISERIESUSR	
	ગળ
Previous sign-on	
Styn-on attempts not valid	
Date password tast changed	
Password expiration interval	
Date password expires	
Set password to expired	
User class	
Special authority *ALLUBJ	
*IUSYSCFG	
*JUBCTL	
*SECADM	
Group profile *NONE	
Owner *USRPRF	
Group authority *NONE	
	More
Press Enter to continue.	
F3=Exit F12=Cancel	
(C) COPYRIGHT IBM CORP. 1980, 2002.	
Mê a MW (î	01/001
🕤 Connected to remote server/host iseriesa using port 23	11.

- _____2. If any of the authorities are missing, use the CHGUSRPRF command to add them (or have someone with the required authority add them for you).
- <u>3</u>. If you have had to add any authorities to your user profile, you will need to signoff and sign back on under a new interactive (emulation) session.

These authorities are required in order to be able to create new instances of WebSphere Application Server – Express for iSeries, as well as new instances of HTTP Server Powered by Apache. *JOBCTL Special Authority is required to be able to access and view job attributes.

3. Ensure that the WebSphere Application Server – Express for iSeries subsystem is operational

File Edit View Communication Actions Window Help
Work with Active Jobs
03/01/03 10:02:41
CPU %: .0 Elapsed time: 00:00:00 Active jobs: 368
rada se te de la constante de l La constante de la constante de
Type options, press Enter.
2=Change 3=Hold 4=End 5=Work with 6=Release 7=Display message
8=Work with spooled files 13=Disconnect
Det Cubeveter/Jeby User (Tube) CDU WillEusetier (Ctatue)
opers neve epe a penu
QENTER C QSTS SBS .0 DEDU
OCTL OSYS SBS .0 DEQU
QSYSSCD QPGMR BCH .0 PGM-QEZSCNEP EVTW
QHTTPSVR QSYS SBS .0 DEQW
ADMIN QTMHHTTP BCH .0 PGM-QZHBHTTP SIGW
ADMIN QTMHHTTP BCI .0 PGM-QZSRLOG SIGW
ADMIN QTMHHTTP BCI .0 PGM-QZSRHTTP SIGW
More
Parameters or command
===>E3-Bofrach E7-Eind E10-Bostant statistics
F11=Dienlau alaneed data F12=Cancel F23=More ontione F24=More keye
MA l a MW î 10/00
G ¹ Connected to remote server/host iseriesa using port 23

__1. Enter **WRKACTJOB** on the iSeries Command Line

- __2. Look for a subsystem entry of QASE5. If the subsystem entry isfound, please skip to the next section.
- __3. If the QASE5 subsystem is not active, start it by issuing the following command STRSBS SBSD(QASE5/QASE5). Re-enter the WRKACTJOB command, and wait until the WebSphere Application Server – Express for iSeries subsystem, QASE5, is in DEQW status.

- 4. Ensure that the HTTP Server Administration TCP/IP Service is operational.
 - __1. Once again, enter **WRKACTJOB** on the iSeries Command Line

Session A - [24 x 80]						_ 🗆 🗙
File Edit View Communicati	on Actions Wi	ndow Help				
		ba 🛃 🛛		🗎 🌰 🔗		
	ա	ork with	Active	Jobs		ISERIESA
					03/01/03	10:02:41
CPU %: .0 E	lapsed tim	e: 00:	00:00	Active job	s: 368	
Tupo optiono proce	Enton					
2=Change 3=Hold	4=Fnd	5=ldork	uith :	6=Release 7	-Displau me	esane
8=Work with spool	ed files	13=Disc	onnect		-bropidg me	oougo
Opt Subsystem/Job	User	Туре	CPU %	Function	Status	
QASE5	QSYS	SBS	.0		DEQW	
QBATCH	QSYS	SBS	.0		DEQW	
QCMN	QSYS	SBS	.0		DEQW	
QCTL	QSYS	SBS	.0		DEQW	
QSYSSCD	QPGMR	BCH	.0	PGM-QEZSCNEP	EVTω	
QHTTPSVR	QSYS	SBS	.0		DEQW	
ADMIN 🔨	QTMHHTTP	BCH	.0	PGM-QZHBHTTP	SIGW	
ADMIN	OTMHHTTP	BCI	.0	PGM-0ZSRLOG	SIGW	
ADMIN	OTMHHTTP	BCI	.0	PGM-OZSRHTTP	SIGW	
						More
Parameters or comma	ind					925.005795.00295
===>						
F3=Exit F5=Refree	h F7:	=Find	F10=	Restart stati	stics	
F11=Display elapsed	data F1	2=Cancel	F23=	More options	F24=More	keys
n de la desta d N						
Mê a	MW		Û			10/002
Connected to remote serve	r/host iseriesa usi	ng port 23		ļ.		11.

- ____2. Scroll down the Subsystem/Job column, and look for a subsystem entry of QHTTPSVR. If the subsystem entry is found, and there are 3 jobs running with a name of ADMIN, please skip to the next section.
- _3. If the QHTTPSVR subsystem and the ADMIN jobs were not running, start the administrative service by entering the following command STRTCPSVR SERVER(*HTTP) HTTPSVR(*ADMIN). Entering this command will start both the QHTTPSVR subsystem as well as the HTTP Server Administration service. Re-enter the WRKACTJOB command, and wait until the QHTTPSVR subsystem and series of 3 ADMIN jobs are active, then proceed to the next step.

5. Use the iSeries Integrated Browser Interface to create a new instance of WAS Express and a related external HTTP Server Powered by Apache

The Integrated Browser Interface will be used to create both an instance of WebSphere Express as well as an

Associated instance of HTTP Server Powered by Apache.

__1. **Open up a web browser** session on your workstation. Go to the following URL:

http://server:2001 (where server is the iSeries host or TCP/IP address). When prompted, enter your iSeries UserID and Password .

____2. You should be at the iSeries Tasks web page, as shown in the next diagram.



__3. Click on the IBM WebSphere Application Server – Express for iSeries link.

- ____4. Note the different page tabs (Welcome, Setup, Manage, TCM and Related Links). Select the Setup tab, if it is not already selected.
- __5. At the Setup page, observe the navigation frame on the left side. Locate the Tasks and Wizards category and click on the link a few times to familiarize yourself with how to expose and hide the various options.



- _____6. Select the Create New Express Server option from the Tasks and Wizards category.
- __7. You should see a Create New Express Server Welcome page, with sections entitled Virtual Hosts, Install Application, and Data Sources and JDBC Providers. Click the Next button to advance to the first real interaction for the wizard.

__8. This screen lets you specify the name for your new application server.

Welcome Setup	re. Application Server - Express for iSeries
Server: All servers	
▼Tasks and Wizards *Create New HTTP Server *Create New Express Server *Migrate Original Server to Apache Create ASF Tomcat Server	Create New Express Server Specify Application Server - Express Name Specify a unique name for the application server.
	Application server name: WASEXP
	Back Next Cancel
•	

Enter an Application Server name of WASEXP

Click the Next button.

__9. The next action is to indicate whether you would like to use an existing, or create a new external HTTP server, to be used in conjuction with your new WebSphere Express application server instance.

Choose the Create a new HT TP server (powered by Apache) option and click the Next button.



____10. Since we indicated that a new HTTP server was to be created, the server name and its associated port settings must be specified.

Enter WEBSERVER (which should be the default) as the HTTP Server name.

Ensure that All IP addresses is selected as the IP address parameter.

Enter 59900 as the Port Number.

HTTP Server with WebSphe	re. Application Server - Express for iSeries
Welcome Setup	Manage TCM Related Links
▼Tasks and Wizards ★Create New HTTP Server ★Create New Express Server ★Migrate Original Server to Apache ©Create ASF Tomcat Server	ATTP server name: WEBSERVER
▼Global Settings ■ Global Server Settings ■ Access Control Lists (original only	Your HTTP server may listen for requests on a specific IP address or on all IP addresses of the system.
▶Internet Users and Groups	On which IP address and TCP port would you like your HTTP server to listen?
▶Search Engine Setup	
	IP address: All IP addresses 💌
	Port. 59900
	Back Next Cancel
4	

Click the Next button.

__11. The next step in the wizard is to define which TCP/IP ports should be used by your new WAS Express instance. Note that WAS Express requires 12 consecutive unused ports.



Enter a starting port number of 59901

Click the Next button

12. The next screen lets you specify which business and sample applications you want to install. For this lab, just select the ExpressSamples application.



Click the Next button.

____13. The wizard parameter entry process is now complete. Double check your server names and the TCP/IP port settings to ensure they are correct. After verifying your settings are correct, **click** the **finish** button to create the new WebSphere Application Server and HTTP Powered by Apache server instances.

Welcope Setup Manage TCM Related Links Tasks and Wizards *Create New HTTP Server *Create New HTTP Server *Create New Express Server * *Create New Express Server *<	HTTP Server with WebSphe	re. Application Server - Express for	or iSeries	🕑 IBM
Tasks and Wizards Summary Create New HTTP Server Create New Express Server Migrate Original Server to Apach When you click Finish this Application Server - Express will be created. Global Settings Global Server Settings Global Setvers Settings Application server name: WASEXP Access Control Lists (original on) Associated HTTP server: WEBSERVER Internet Users and Groups Internal port range: 59901 - 59912 Search Engine Setup Virtual host: Business applications: None Sample applications: Application name Iternal port range: Mone Summary Internal port range: Virtual host: Business applications: Business applications: Application name URL to accer Image: Search Engine Setup	Welcome Setup	Manage TCM	Related Links	
Global Settings Global Server Settings Access Control Lists (original onthe Access Control Lists (original o	▼Tasks and Wizards *Create New HTTP Server *Create New Express Server *Migrate Original Server to Apache Create ASF Tomcat Server	Su When you click Finish this . be created.	ummary Application Server - I	▲ Express will
Search Engine Setup Virtual host: default_host Business applications: None Sample applications: Application name URL to acces Back Finish Cancel	 ✓ Global Settings ■ Global Server Settings ■ Access Control Lists (original only ▶ Internet Users and Groups 	Application server name: Associated HTTP server: HTTP server addresses:	WASEXP WEBSERVER *:59900	
Back Finish Cancel	▶ Search Engine Setup	Internal port range: Virtual host: Business applications: Sample applications:	default_host None	URL to acces
		Back Finish Car	ncel	

____14. Depending on the size of the iSeries server being used to complete the lab, it may take 3 or more minutes for your instances to be created.

Under the Server list box with your instance it will show status as " Creating " .



The HTTP server ADMIN job will be consuming significant processor resources during instance creation process.

🛡 <mark>-</mark> Session A - [24 x 80]					- O ×
File Edit View Communication Ac	tions Window Help				
	، ایوا 🗞 اند		ا 🏈		
	Work with	Active Jobs			TSERTESA
			-	03/01/03	10:13:23
CPU %: 1.1 Elaps	ed time: 00:	10:42 Ad	ctive jobs:	373	
nanghain is chí mudairtío chons. • na					
Type options, press Ent	er.				
2=Change 3=Hold 4	=End 5=Work	with 6=Re	lease 7=Dis	splay mess	sage
8=Work with spooled f	iles 13=Disc	onnect			
Opt: Subcuctom/Job: Uco	r Tuno	CDU % Fue	otion	Statuci	
ADMIN DIE	ннттр вст	0 PGM		TTML	
	HHTTP BCT	0 PGM	-OYUNLANG	TIMU	
DIVAEXEC OTM	HHTTP BCT	0 PGM	-OZSHSH	EVTH	
OPAZSPUT OTM	HHTTP BCT	8 PGM	-CRTHASINST	RUN	
	S SBS	.0	on rand ind i	DEOM	
OPADEVOOOK ISE	RTESUSR INT	.0 CMD	-WRKACTIOR	RUN	
OSERVER OSY	S SBS	. 0		DEOM	
OPWESERVSD OUS	ER BCH	. 0		SELW	
OPWFSERVS0 OUS	ER PJ	. 0		DEQU	
					More
Parameters or command					
===>					
F3=Exit F5=Refresh	F7=Find	F10=Resta	art statistic	CS	
F11=Display elapsed dat	a F12=Cancel	F23=More	options F2	24=More ke	eys
Mê l a	MW	Û			10/002
Connected to remote server/host is	seriesa using port 23				11.

You may click on the Refresh () button to update the status every 10-15 seconds. Please avoid refreshing frequently as it will only prolong the completion.

6. Explore the set of WAS Express services that are available via the Integrated Browser Interface

After your WAS Express and HTTP Server Powered by Apache instances have been created, you will be shown the Manage Application Server - Express "WASEXP" screen.



Take a couple of minutes to explore the set of administrator actions that can be launched from this interface.

7. Enable and start the full function WebSphere Application Server Administrative Console

The Integrated Browser Interface that you have been using is very adequate for performing simple WebSphere Application Server – Express administrative tasks. In cases where things become more involved, use of the supplied full function Administrative Console is required.

It is interesting to note that the Administrative Console itself is a WebSphere based application, and must be started like any other application prior to being available for use. By default, the full function Administrative Console is is disabled.

To start the Administrative Console, your new instance of a WebSphere Application Server must be running.

- ____1. Locate the Server Administration buttons at the top of the left navigation frame (It may already be selected). **Click** the **Start** button (the one with the green triangle).
- __2. Depending on the size of your iSeries machine it will take a minute or two for your WebSphere E xpress application server instance to start. You can periodically (every 10 seconds or so) click the refresh button to determine when your application server has started.



iSeries Technology Center – IBM Rochester © Copyright IBM Corporation 2003 With your WebSphere Express instance now running, **click** on the **Manage Installed Applications** link in the left navigation pane.

The following dialog will be displayed.



- ____18. Select the adminconsole Application name, and click on the Properties button.
- ____19. The Application Properties form will be displayed. **Click** on the **General Tab** if it is not already in focus.
- ____20. Click on the Application Enablement pull-down list and select Enabled.

HTTP Server with WebSphere, Application Server - Express for iSeries					
Server: WASEXP - WAS - Expres	Server: WASEXP-WAS-Express V5				
🗢 Running 🛛 💽 💋	<u>All servers</u> -> <u>WASEXP</u> -> <u>Manage Installed Applications</u> -> Application Properties				
▼Tasks and Wizards *Create New Express Server *Create Virtual Host *Install New Application *Create JDBC Provider *Create Data Source	Application Properties @ General Virtual Host Mapped to Web Modules				
▼Server Properties ■Server Tracing ■Server Ports ▼Applications ■Manage Installed Applications	Application name: adminconsole ⑦ Application enablement: Disabled I ⑦ Location: Enabled Disabled Ata/WebASE/ASE5/WASE				
▼Resource Configuration ■ Manage Virtual Hosts ■ Manage JDBC Providers ■ Manage Data Sources	✓ Cancel				
▼Problem Determination ■ View Logs					
▼Tools & Launch Express Console					

____21. Click OK at the bottom of the Application Properties form to save the changed properties and return to the Manage Installed Applications form.

22. Back at the Manage Installed Applications form, with the adminconsole still selected, **click** on the **Start** button to start the Full Administrative Console.



23. After a bit, the form will be updated, indicating that the Administrative Console is now running.



- ___24. If you are interested in exploring some additional Integrated Browser Interface capaibilities, please perform the following steps. If you are pressed for time, please feel free to skip to the next major step in the sequence.
 - I.Notice the installed applications and their status. Select the ExpressSamples option.
 - II. Note the additional options for stopping the application or viewing the properties. **Click on the Properties button**.
 - III. You should now see an Application Properties page with two tabs- General & Virtual Host Mapped to Web Modules. In the General tab, note the location of the installed application. **Click** on the **Virtual Host Mapped to Web Modules** tab.
 - IV. Notice that there is one web module. Select the radio button next to the web module name. Notice that you can now assign a different virtual host to this web module.
 - V. Ensure the virtual host remains default_host and then **click** the **Cancel** button.
 - VI. Click OK to the confirmation question regarding leaving the form.
- ___25. When completed with your exploring, **Click** on the **Close** button at the bottom of the form to exit the Manage Installed Applications dialog.

__26. Back at the Express Configuration Console, click the Server Ports option under the Server Properties category.

HTTP Server with WebSphe	re. Application Server - Expre	ess for iSer	ries 🛷	IBM
Welcome Setup	Manage TCI	M	Related Links	
Server: WASEXP - WAS - Express	3 ∨5 💌			
🔹 Running 🛛 🔯 🧖	Sei	ver F	orts T	
▼Tasks and Wizark	Services and their assoc	iated por	ts: 🕐	
☆Create New Express Server ☆Create Virtual Host	Service name	Port		
*Install New Application	Admin	59911		
*Create JDBC Provider *Create Data Source	Admin	59912		
V Summe Duranting	HTTP transport	59910		
Server Tracing	HTTP transport	59911		
Server Ports	HTTP transport	59912		
▼ Applications	JMX SOAP connector	59906		
Manage Installed Applications	Name service	59901		+
▼Resource Configuration ■ Manage Virtual Hosts ■ Manage JDBC Providers ■ Manage Data Sources	Close			
▼Problem Determination ■ View Logs				

You should see the above table listing several services and their associated TCP/IP ports.

Notice the two Admin service ports. There are also HTTP transport services for these ports. This is for the full function administrative console. The first port is for HTTP (nonsecure), the second port is HTTPS (secure).

You should also see the port for your internal WAS Express HTTP server, and a few others.

Press the **Close** button to exit out of the Server Ports display.

- 8. Configure the new WAS Express instance to enable multiple language encodings
 - __1. Now that the full Administrative Console application has been started, it can be used to enable the multiple language encoding support required for successful execution of the WebFacing runtime server. Click on the Launch Express Console option under the Tools category. You should see another browser window pop up, taking you to the full function administrative console application. Depending on the size of the iSeries server being used, it may take a few seconds for your console application to appear. Eventually you should see the console logon screen.
 - 2. Enter some unique UserID and press the OK button. Note the supplied UserID is associated with a "Session" of the full function WebSphere Administrative Console, and does not have to be a valid iSeries UserID.



__3. The first time the administrative console application is run, it will take a moment or two for it to come up. Please be patient. You should eventually see the console 'home page', as shown in the next diagram.

WebSphere. Applicat	tion Server Administrative Co 5	onsole	IIN.
Home Save Prefe	erences Logout Help		80
User ID: iseriesusr ISERIESA_WASEXP	••• <u>WebSphere</u> <u>Application Server on</u> <u>IBM.com</u> The place for everything about WebSphere Application Server for iSeries, including FAQs, PTF information, discussion forums, and more.	About your WebSphere Application Server BM WebSphere Application Server - Express, 5.0.0 Build Number: s0245.03 Build Date: 11/11/02	
-			-
	WebSphere Status i < Previous	: <u>Next ></u> March 1, 2003 4:01:3 ms ↓Total Configuration Problems <u>0</u>	37 PM UTC 👲
4	Preferences		*

- ____4. Within the navigation frame on the left side of the browser window, notice the User ID: parameter you entered and your node name. Under the server name, **click** the **Servers option** and you should see an Application Servers option.
- __5. Click the Application Servers link. It may take a moment or two for the page to come up.

__6. You should see your application server and node listed, as shown in the next diagram.

WebSphere Applicat	ion Server Administrative	Console	BN.	
Home Save Prefe	erences Logout Help 🙀			
User ID: iseriesusr ISERIESA_WASEXP Servers Application Servers	Application Servers An application server is a server we applications.	hich provides services required to run er	Iterprise	
 Applications Total: 1 Security Environment Preferences 				
	🗖 Name 🗘	Node 🗘		
Troubleshooting Troubleshooting	WASEXP ISERIESA_WASEXP			
-	WebSphere Status I < Previor	us <u>Next</u> > March 1, 2003 4:03:41 F CI ▲: <u>0 new, 0</u> total total	PM UTC 💁	

- __7. Click on the application server link (WASEXP). It may take a moment or two for it to come up.
- __8. You should see a list of general properties and additional properties on the Configuration tab. Scroll through the list and locate the Process Definition option. Click on the Process Definition link.

Additional Properties	
Web Container	Specify thread pool and dynamic cache settings for the container. Also, specify assiston manager settings such as persistance and buning parameters, and HTTP transport settings.
Looping and Tracing	Specify Logging and Trace settings for this server.
ORB Service	Specify settings for the Object Request Braker 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.
Diegnostic Trece Service	View and nodify the properties of the diagnostic trace service.
Debuccino Service	Specify settings for the debugging service, to be used in conjunction with a workspace debugging client application.
Ell Service Logs	Configure the EM service log, also known as the activity log
Server Components	Additional runtime components which are configurable
Process Definition	A process definition defines the command line information necessary to start/infiaize a process.
Performance Monitoring Service	 specify settings for performance nontering, inclusing enabling performance monitoring, selecting the PNI module and setting monitoring levels.

__9. You should see a list of general properties and additional properties on the Configuration tab. Click on the Java Virtual Machine link in the Additional Properties section.

10. You should see a list of general properties and additional properties on the Configuration tab. There are two options for setting the encoding override - the Generic JVM arguments field in the general properties section, or via the Custom Properties link in the additional properties section. In this lab, you will use the Custom Properties option. Click the Custom Properties link.

Additional Properties	
Quatern Properties Java system properties to be set in the memory for this JVM.	

- ____11. You should see the Custom Properties panel, with none currently defined. **Click** on the **New** button.
- ____12. For the custom properties entry, specify

Name: client.encoding.override (in lower case) Value: UTF-8 (in upper case).

Name	client.encoding.oven/kie	\blacksquare Specifies the name (or key) for the property .
Volue	* [UTF-8]	\blacksquare Specifies the value paired with the specified norm
Description		Provides information about the name-value pair.

____13. Click the OK button.

14. You should be back at the Java Virtual Machine configuration page. Note the message at the top of the window, indicating that you have made changes and must save them in order for it to take effect.

Message(s)	
A Changes have been made to your local configuration. Click Save to apply changes to the master configuration	
II The server may need to be restarted for these changes to take effect.	

- __ 15. Click on the Save link.
- _____16. You should see a Save to Master Configuration option screen appear. Click on the Save Button.

Save te Master Configuration	
Click the Save button to update the master repository configuration. Click the Cancel t	repository with your changes. Clict the Discard button to discard your changes and begin work again using the master button to continue working with your changes.
Total changed documents: 1	
E View terms with changes	

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- ____17. After confirming the configuration save, you should be back at the main administrative console screen.
- _____18. Click the Logout option in the toolbar at the top of the window, and close the browser session.



- 19. Changes to the Java Virtual Machine (JVM) settings require that the application server be restarted. Your next step is to go back to the Integrated Browser Interface, restart your application server instance, and verify that it is operating properly. Go back to your Integrated Browser Interface session.
- __20. Click the Stop button associated with your WASEXP server. You can periodically (every 10 seconds or so) click the refresh button to determine when your application server has stopped.
- ___21. **Click** the **start** button (the one with the green triangle). Depending on the size of the iSeries server being used, it will take a minute or two for your instance to start. You can periodically (every 10 seconds or so) click the refresh b utton to determine when your application server has started.

9. Regenerate the HTTP server plugin from the full function administrative console.

A feature of the WAS Express integrated browser interface is that it automatically regenerates the HTTP Server plugin file for events such as installing a new application.

It is important to note that the full function administrative console **does not** provide this feature. In this step you will learn how to manually regenerate the HTTP server plugin within the full function administrative console.

- __1. Back on the Integrated Browser Interface, restart the full function Administrative Console by clicking on the Launch Express Console option under the Tools category. You should see another browser window pop up, taking you to the full function administrative console application. Depending on the size of the iSeries server being used, it may take a few seconds for your console application to appear. Eventually you should see the console logon screen.
- ____2. Again, **Enter** some unique **UserID** and **press** the **OK** button. Note the supplied UserID is associated with a "Session" of the full function WebSphere Administrative Console, and does not have to be a valid iSeries UserID.
- ____3. Under the server name, **click the Environment option**, and you should see the Update Web Server Plugin option.

WebSphere Application Server Version 5	Administrative Console	IEM.
Home Save Preferences Lo	ogout Help	D D
User ID: iseriesusr	Application Servers	<u> </u>
ISERIESA_WASEXP	An application server is a server to run enterprise applications.	r which provides services required
 Applications Resources JDBC Providers 	Total: 1 ⊞ Filter	
Mail Providers	Preferences	
Resource Adapters	🔲 🗖 Name 🗢	Node 🗘
⊞ Security		ISERIESA_WASEXP
Environment Update Web Server Plugin Virtual Hosts Manage WebSphere Variables Image	WebSphere Status i < Previo WebSphere Runtime Messag Total All Messages: 30	Next > March 1, 2003 4:05:41 P jes Cle 1 0 new, 0 1: 30 new, 0 1: 30 new, 0

____4. **Click on the Update Web Server Plugin link**. In a moment or so you should see the Update web server plugin configuration screen.

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__5. Click on the OK button to manually regenerate the plugin. You should see a confirmation message at the top of the window indicating that the task was successful.

Message(s)

The web server plugin configuration was updated successfully

- ____6. Click on the View or download the current web server plugin configuration file link.
- ____7. Note that the plugin file is in XML (eXtensivle Markup Language). Also, note the TCP/IP port settings for the WAS Express internal HTTP server task and the external Apache HTTP server task.
- __8. Select the Servers category, then the Application Servers link. Click on your WebSphere Express Instance, then the Web Container property under Additional Properties.

_9. View the HTTP Transports property.

WebSphere.	Application Server Version 5	Adminis	strative Console		IIN.
Home Save	Preferences	Logout	Help		BC
User ID: iseriesusr ISERIESA_WASEX Servers Application	Application Serve HTTP Trans HTTP Transports (ers > WASEXP ports description []	> Web Container >		
	Total: 3	te			
⊞ Security	🔲 🗖 Host 🗘		Port	SSL Enabled	
Environment	— –		59910	false	
<u>Update VV</u> Virtual Hos	— *		59911	false	
<u>Manage W</u>	— [*]		59912	true	
⊞ Naming .			- 15	v	*
 	WebSphere Statu WebSphere Con	s İ 🛛 🛓	<u>Previous Next ></u> oblems	March 1, 2003 4:08:4:	2 PM UTC 👲
	Total Workspace Fi	les O	👩 Total Configu	ration Problems <u>1</u>	
4					

Note that there are ports defined for the WAS Express internal HTTP server, and the two ports for the full function administrative console. Notice that one of the admin ports is SSL enabled.

- _____10. If you have time, feel free to browse thru some of the other categories. **DO NOT MAKE ANY CHANGES AT THIS TIME!**
- _____11. When you have finished browsing thru the administrative console options, **ensure** you logout of the session.
- ____12. Close out this browser session.

10. View the iSeries job information (Optional Exercise)

In the preliminary step at the beginning of the lab you observed that the OS/400 QASE5 subsystem was operational prior to creating your WAS instance. In this step you will view the OS/400 job log information.

- __1. Sign on to a 5250 session.
- ____2. .At the command line, enter **WRKACTJOB** and press enter.
- ____3. Scroll thru the job activity until you find subsystem QASE5.
- ____4. Locate your particular server job (i.e. WASEXP) and choose option 5 (work with job).
- __5. Select option 10 to work with the job log. Press the F10 key to view the detailed job information.
- __6. Locate the message "WebSphere application server WASEXP (yourservername) ready."
- __7. Place the cursor on this message line and press the F1 key to display the detailed message.
- __8. The message should state which port or ports that administrative requests can be handled.
- ___9. Questions:

Which port(s) are listed?

- ____ all ports the server is listening on
- ____ only the secure and nonsecured full function admin console ports
- ____ only the nonsecured full function administrative console port

- 11. View the WebSphere Application Server Log Information (Optional Step)
 - 1. Return to the Integrated HTTP Server WebSphere Application Server Express for iSeries Browser Interface.
 - __2. At the Express configuration console, click the View Logs option under the Problem Determination category. Note the 4 different log files and their location in the OS/400 IFS.
 - __3. Select the SystemOut.log file and press the View button. A new window should pop up, showing you the log file contents.
 - ____4. Use the log file to answer the following questions. Hint: Scroll to the bottom of the listing, then scroll upwards to find the last application server startup section.
 - __5. Close the Log File Viewer.

Questions

Java 2 security isenableddisabled		
What service is listening on port 59901?		
Which applications have been started?		
Which port is utilizing the HTTPS transport?		
What servlet & JSP versions does your application server support?	servlet _	JSP

The answers are on the next page.

<u>Answers</u>

Java 2 security is ____enabled _x__disabled port RMI What service is listening 5xx01? on Connector Which applications have been started? adminconsole & ExpressSamples_

Which port is utilizing the HTTPS transport? __5xx12 (the secure admin console port)

What servlet & JSP versions does your application server support? 2.3_servlet 1.2_JSP

This concludes the lab exercise.