VSE/ESA

Development with Websphere Studio Application developer

z/VM, VSE, and Linux on zSeries Tech Conference Miami Beach - Oct 7 - 10th



Wilhelm Mild

VSE/ESA Design and Development

e -business ambassador

IBM Boeblingen Laboratory



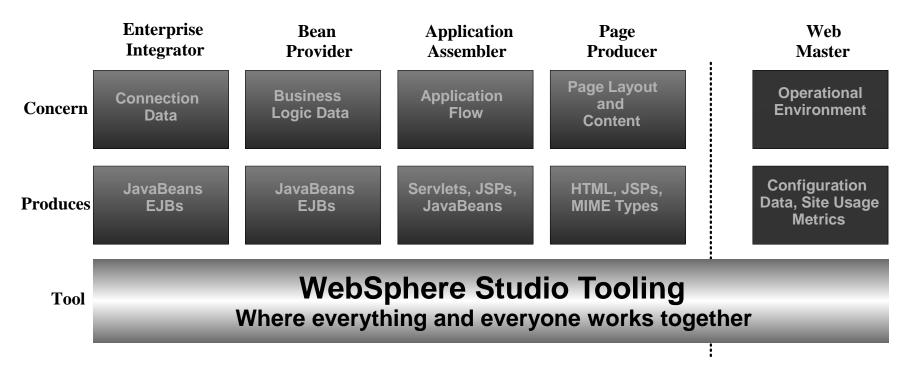
Open/Standards-based Application Deployment





Developing Web Applications requires more than just writing Java code

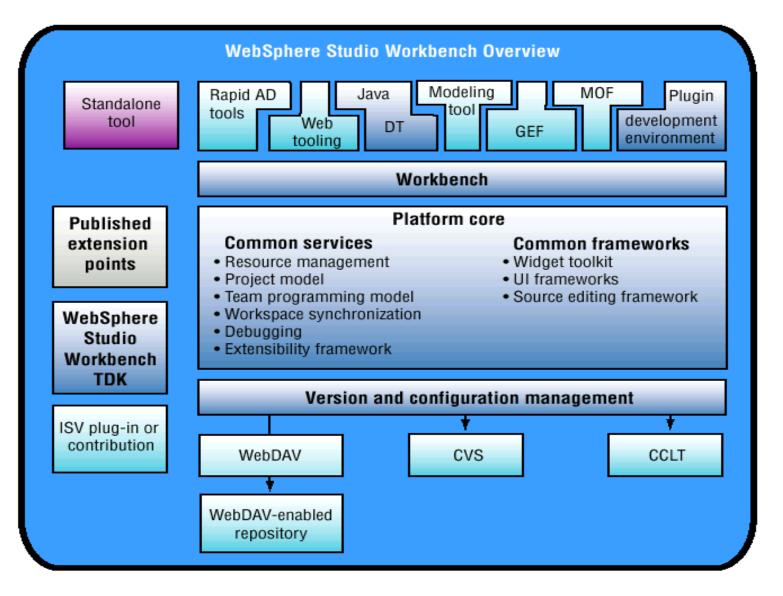
Role



One tool, many user perspectives

VS@

Workbench - Architecture



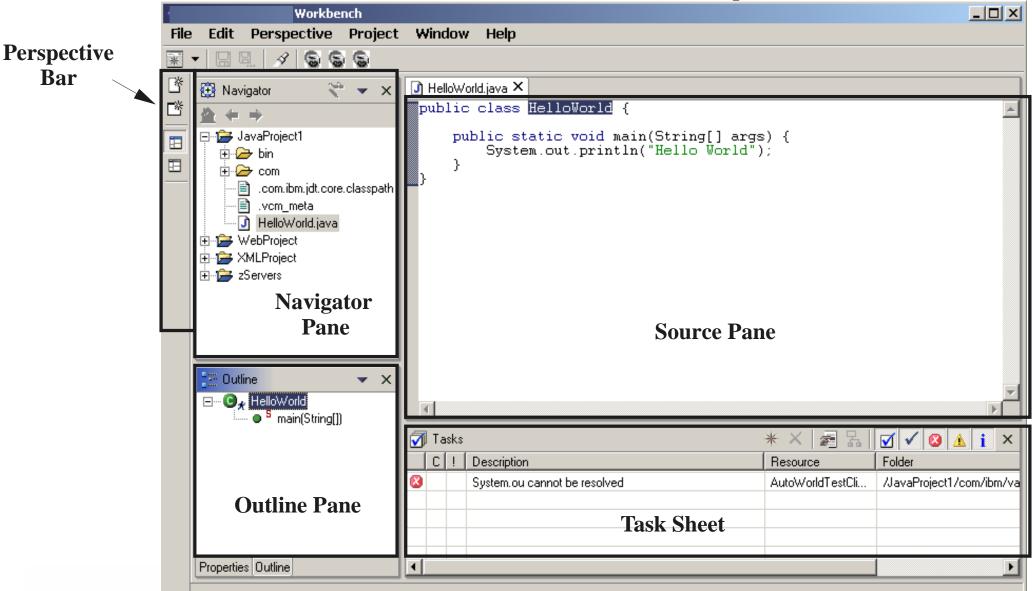
www.eclipse.org

Offering/Branding

- WebSphere Studio is the brand name for the next generation of tooling:
- Products:
 - WebSphere Studio <u>Site Developer</u>
 - -Focused on development of Web Services, JSPs, Servlets, XML, WAS and Basic Team support.
 - WebSphere Studio <u>Application Developer</u>
 - Includes all WebSphere Studio Site Developer functionality
 - Focused on development of J2EE and database applications in a team environment
 - -VisualAge for Java EE 4.0 will contain the Beta

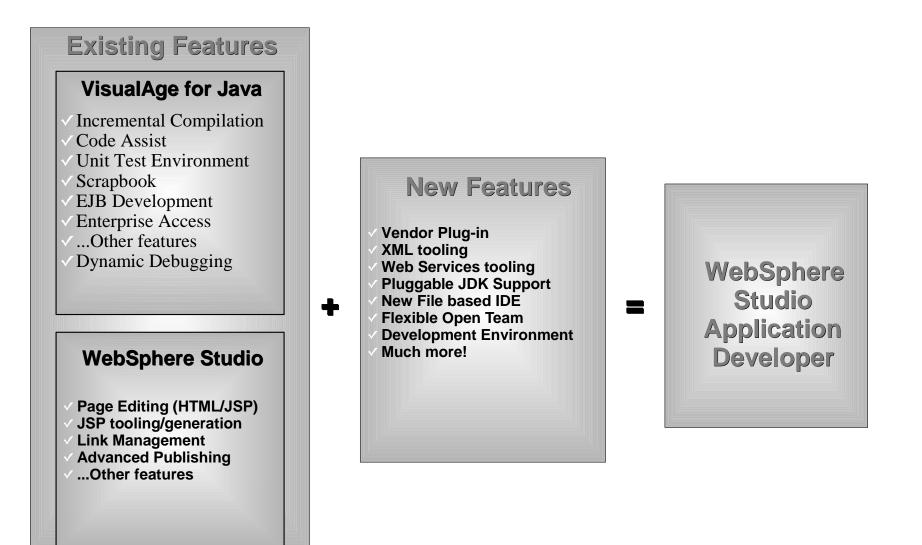


Workbench – Organization Default Resource Perspective

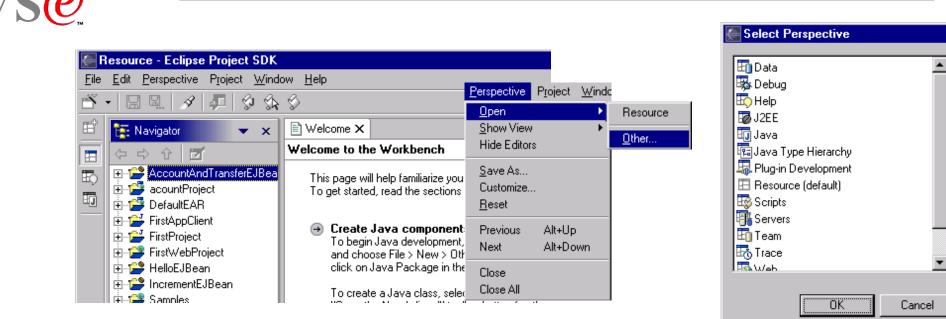




WebSphere Studio Application Developer



Perspective



X

- A group of related views and editors is called a perspective
- You can open different perspective by
 - Perspective -> Open -> Other
- WebSphere Application Developer contains several Perspective
 - Resource perspective: default perspective when you open the workbench
 - Java perspective: number of views that provide the information that you need to work on a Java project
 - Managing perspective: which allows you to work with a team
 - Debug perspective: which allows you to run and debug your project.

Perspectives



- Perspectives allow team members to focus on the task they just work on
 - Provides "Views" into the e-business application
- Perspectives can be opened from same Workbench or anchored to a different Workbench
 - Allows developers to maximize "real-estate" usage
- Desktop Perspectives can be customized
 - The design intentions allow to configure the workbench in a manner, that developers can have similar look and feel to other Java tools they are familiar with
- This allows customers to consolidate all Java tools to one development platform
 - Unique Perspectives should satisfy everyone
 - VAJ developer, JBuilder developer, Visual Cafe developer can all have their own perspectives

Views



Perspective	Project Wind	ow Help	
Open		▶	
Show View		Navigator	
Hide Editors	;	🛄 Bookmarks	
Save As		- Outline	
Customize.		🛃 Properties	
Reset		- 🗊 Tasks	
Previous	Alt+Up		
Next	Alt+Down	Other	
Close			
Close All			

- Display a view by selecting Perspective > Show View
- Views support:
 - Editors
 - Provide alternative presentations or navigation of the information
- A view might appear by itself, or stacked with other views in a tabbed notebook
- Views can be floated by Selecting the blue bar at the top of the Tasks view and drag it on to the desktop.

Standards Support

- VS@
 - Advanced-function HTML and JSP editor
 - Built-in WebSphere Application Server and Tomcat Jakarta test environment with JSP Debugger
 - Database support to define databases and create applications using wizards
 - Advanced rich media image editing and animation tools
 - An integrated version control system including adapters for Rational ClearCase LT OEM and Concurrent Versions system (CVS)
 - Integrated Java development environment
 - Comprehensive Visual XML development environment
 - Complete Web services development environment

VS@

Standards Support

- EJB 1.1
- Servlet 2.2
- JSP 1.1
- JRE 1.3
- Web Services Definition Language (WSDL) 1.1
- Apache SOAP 2.1
- XML DTD
- XML Namespaces
- XML Schema
- = HTML 4.01
- CSS2 (PageDesigner displays a subset)



WebSphere Studio Application Developer – Key Features

Java IDE

- Web Services development environment
- XML Tooling
- RDB Tooling
- Web Tooling
- Java Performance Analysis/Trace Framework
- J2EE Tooling

Java IDE - Key Features



- Is shipped with JDK 1.3
- Pluggable JDK support
 - Defined at project level
- Hot Method Replace
- Java Snippet support (Scrapbook)
- Task Sheet (All Problems Page)
- Code Assist
- Class Outliner
- One debugger for local/remote debugging
- Run code with errors
- Refactoring Support
 - Rename/move support for method/class/packages
 - Fixes all dependencies for renamed element



Java IDE - Incremental Compilation/Hot Method Replace

- Incremental compilation/hot method replace will be supported with these caveats:
 - The JVM must support hot method replace
 - -J9 JVM supports this today
 - -IBM JVM plans to support this with JDK 1.4
 - -SUN JVM may support this with JDK 1.4
- IBM has worked with JavaSoft to add hot method replace into JVM technology
 - This was the best way to support pluggable JDKs and hot method replace in our Java IDE
 - Must wait for JVMs to be released which support this technology



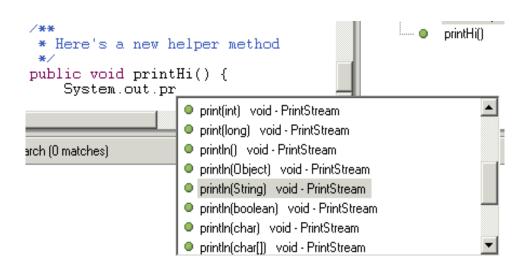
Java Perspective

Java - Application Developer ile <u>E</u> dit <u>P</u> erspective P <u>r</u> oject <u>D</u> ebug <u>W</u> indow	Hab	
	<u> </u>	
Packages Packages JUnit (default package) MyTestCase.java MyTestCase.java ActiveTestSuite.java ExceptionTestCase.java ExceptionTestCase.java ExceptionTestCase.java ExceptionTestCase.java TestSetup.java TestSetup.java Assert.java Assert.java Assert.java TestCase.java TestFailure.java TestFailure.java TestResult.java TestSuite.java TestSuite.java TestSuite.java TestSuite.java TestSuite.java TestSuite.java TestSuite.java TestSuite.java TestSuite.java RepeatedTest.java TestSailure.java TestSuite.java RepeatedTest.java TestSuite.java TestSuite.java RepeatedTest.java TestSuite.java TestSuite.java TestSuite.java RepeatedTest.java TestSuite.java RepeatedTest.java TestSuite.java RepeatedTest.java TestSuite.java TestSuite.java TestSuite.java TestSuite.java RepeatedTest.java	<pre>> VectorTestjava VectorTestjava X package junit.samples; import java.util.Vector; import junit.framework.Test; import junit.framework.TestCase; import junit.framework.TestSuite; import junit.textui.TestRunner; /*** * A sample test case, testing <code>java.util.Vector * */ public class VectorTest extends TestCase { protected Vector fEmpty; protected Vector fFull; public Static void main (String[] args) { junit.textui.TestRunner.run (suite()); } protected void setUp() { fEmpty= new Vector(); fFull= new Vector(); } </code></pre>	CIT </th
J SimpleTestCollector.java J Sorter.java J StandardTestSuiteLoader.ja	🛃 Tasks (0 items)	₩ ☆ ‡ ×
Standard i estsuiteLoader.ja TestCaseClassLoader.java TestCollector.java TestSuiteLoader.java Version.java	C ! Description Resource In Folder - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -	Location
Packages Hierarchy	Tasks Search Console	
0 item(s): 0 tasks, 0 errors, 0 warnings, 0 infos		

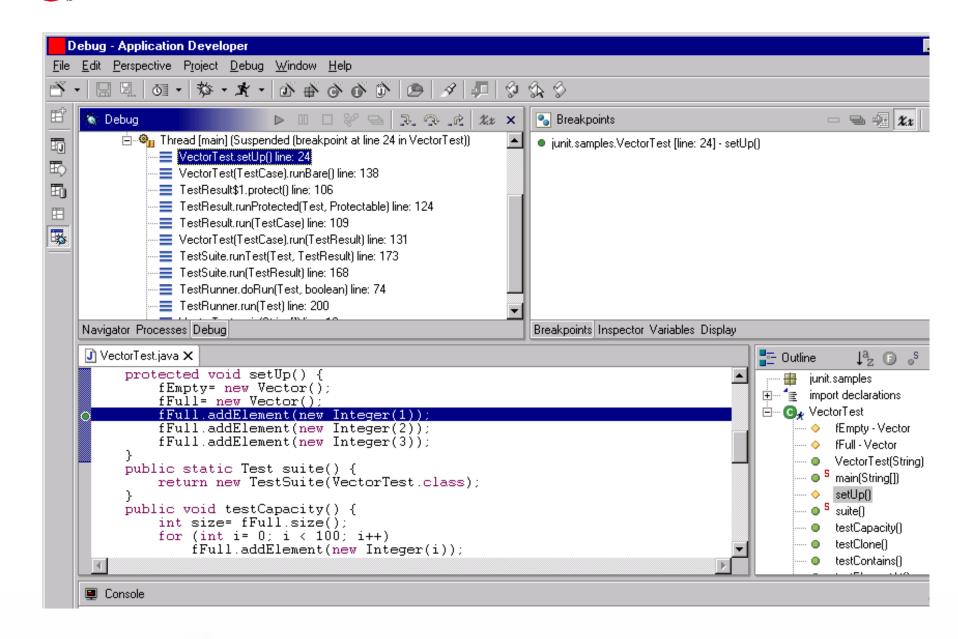


Java Editor

- Coding Assistance
 - Enter assist mode with CTRL-space
 - Select from scrolling list of possible completion's



Debug Perspective



Web Tooling



HTML/JSP Editing

- ► WYSIWYG page design, source editing, page preview
- HTTP/FTP Import
- WAR Import/Export
- Links View (Relations)

View HTML/JSP and all links referenced in HTML/JSP

Parsing/link management

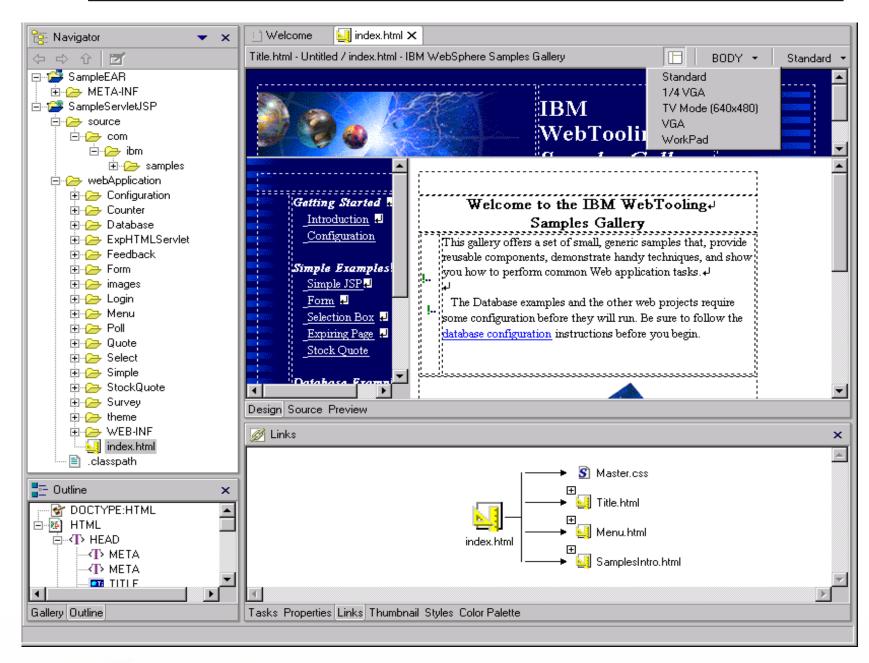
Automatically fix links when resources are moved/renamed

Built-in Servlet, Database, JavaBean Wizards

Quick generation of HTML/Servlet/JSP

- Built-in JSP Debugging
- Site-Style and Template Support
- Built-in <u>Web Perspective</u> provides the useful views for HTML/JSP developer

Web Perspective



VS@

J2EE Tooling Features

- Full EJB 1.1 Support
- WAR/EAR deployment support
- All metadata exposed as XMI
 - No hidden metadata
- Enhanced Unit Test Environment for J2EE
 - IBM WebSphere Application Server or Apache TomCat
 - Create multiple projects with different Unit Test configurations/instances
 - -Allows for versioning of unit test environment
 - Share Unit Test Environment Configuration across developers
- O/R Mapping for EJBs
 - Top-Down/Bottom-up/Meet-in-the-middle



J2EE Tooling Features (continued)

Updated EJB Test Client

- HTML Based
- J2EE Programming model
- Built-in JNDI Registry Browser
- Enterprise Connectors (separate plug-in offering)
 - JCA Connector based
- Built-in <u>J2EE Perspective</u> provides the useful views for the EJB/J2EE developer

J2EE Perspective

- J2EE Projects
 - Enterprise application, EJB, Web, application client modules
 - Provided in the J2EE View
- EJB Editor
 - deployment descriptor (ejb-jar.xml)
- EJB Extension Editor
 - extensions (ibm-ejb-jar-ext.xmi)
 - bindings (ibm-ejb-bnd-ext.xmi)
- Enterprise Application Editor
 - EAR deployment descriptor (application.xml)
- EJB RDB Mapping Editor

The J2EE View



እ J2	2EE - Application Developer						_	
Eile	<u>E</u> dit <u>P</u> erspective P <u>r</u> oject <u>W</u> indow <u>H</u> elp							
Ď.	· 🖾 🖾 🖉 🖉 🖉 🖉 🖾 🖉	• A I Q Q	Ś					
Ē	👼 J2EE View 🛛 🗙	x≥) ibm-ejb-jar-bnd.xmi	🔂 Map.mapxmi	透 application	uxml 🛛 🐻 *ejb	o-jar.xml 🗙		
	Count Account Acc	Enterprise beans:	T T D A B H • Transaction Envirom	ype: ype options: isplay name: ttributes: ean class: fome interface: ent EJB Referen	Entity - Conta Stateless: Account a ccount belence - AccountBear AccountHom	tiner Managed Stateful: Stateful: R float New Delete New Delete	Ec	▲ ■ Jit

Data Tooling



- Relational Schema Center
 - Provides views geared for DBAs to
 - -Create Databases
 - Create Tables/Views/Indexes/Keys
 - -Generate DDL
 - Online and off-line support for working with databases
 - Metadata generated as XMI
- SQL Query Builder
 - Visually construct SQL statements
 - -Insert, update, delete, select supported
 - Metadata generated as XMI
 - SQL/XML mapping
- Built-in <u>Data Perspective</u> provides the useful views for the DBA

Data Perspective

Data Perspective contains

- DB Explorer
 - -View existing database entities on database server
 - -Read only view
- Data view
 - -writable local view of database entities
 - -Copy of description of existing entities
 - Description of new entities

Data Perspective

Data Perspective contains

- DB Explorer
 - -View existing database entities on database server
 - -Read only view
- Data view
 - -Writable local view of database entities
 - -Copy of description of existing entities
 - Description of new entities

VS@

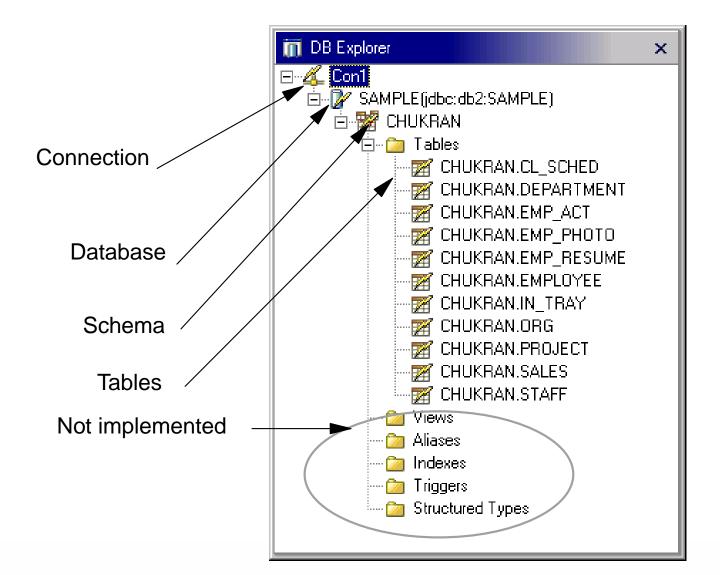
New Database Connection

pplication Developer	
Perspective P <u>r</u> oject <u>W</u> indow <u>H</u> e)
🖳 🖌 🚛 🔗 🏡 🔗 –	
B Explorer ×	
	<u> </u>
New <u>C</u> onnectio	
Import to Local.	
Gienerate script	
	💱 Tasks (Oitems)
	C ! Description
plorer Data View Navigator	
plorer Data View Navigator	C ! Description Image: Contract of the second s

n ection to a database. Con2 SAMPLE	
I IBM DB2 APP DRIVER jdbc:db2:	
COM.ibm.db2.jdbc.app.DB2Dri	
E:\SQLLIB\java\db2java.zip jdbc:db2:SAMPLE	Browse
Finish	Cancel
	jdbc:db2: rockinrb COM.ibm.db2.jdbc.app.DB2Dri E:\SQLLIB\java\db2java.zip jdbc:db2:SAMPLE

DB Explorer

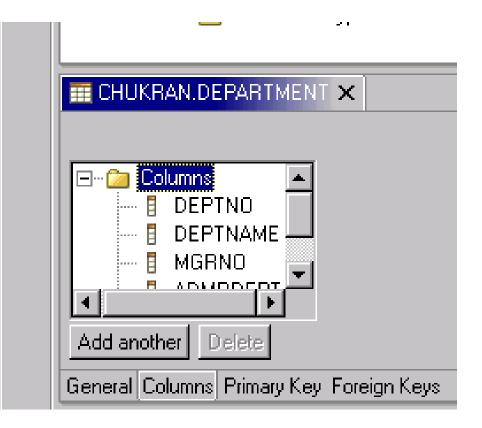
DB Explorer after opening new connection



Schema Editor

Double-click in navigator edits table

- Add columns
- Specify keys



XML Tooling



XML Tooling provides integrated tools/perspectives to create XML based components:

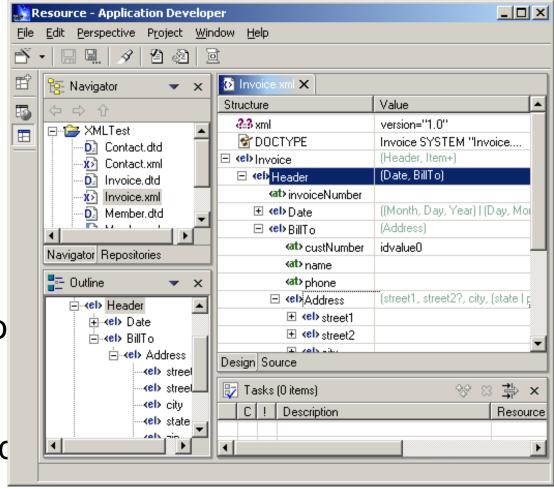
- DTD Editor
 - -Visual tooling (Design/Source) for working with DTDs
 - Create DTDs from existing documents
 - Generate an XML Schema from a DTD
 - Generate JavaBean(s) for creating/manipulating XML documents
 - Generate an HTML form from a DTD
- XML Schema Editor
 - Visual tooling (Design/Source) for working with an XML
 Schema
 - Generate DTDs from an XML Schema
 - Generate JavaBean(s) for creating/manipulating XML documents
- XML Source Editor
 - DTD/Schema validation
 - -Code Assist for building XML documents

XML Tooling (continued)

- Additional XML Tools:
 - XML Mapping Editor
 - Generate XSL to map XML between DTDs/Schemas
 - ► XSL Trace Editor
 - Trace XSL transformation
 - Examine relationships between the result node, the template rule, and the source node
 - ► XML to/from Relational Databases
 - Generate XML, XSL, XSD from an SQL Query
 - RDB/XML Mapping Editor
 - Map columns in a table to elements and attributes in an XML document
 - Generate a Database Access Definition (DAD) script to compose/decompose XML documents to/from a database
 - DAD is used with DB2 XML Extender
- Built in <u>XML Perspective</u> provides the useful views for the XML developer

XML Editor

- Create XML
 - ► New file
 - From DTD file
 - From XSD file
 - Validation Option
 - Smart double-click
 - Content Assist
 - Combo-box choices fo enumerator attribute type
 - Element content based on sequence/choice relationships



VS@

DTD Editor

- Create DTD
 - Create New DTD
 - Create from Multiple XML files
- Validation
- Define elements, attributes, entities, notations
- Define content model, occurrence
- Reusable Entities
 - External files
 - Internal model
 - Within another entity

1000	rence esource - Application Dev	eloper		
Eile	Edit Perspective Project	DTD <u>W</u> indow <u>H</u>	elp	
ð.	• 🔛 🖳 🖌 🎽 🕷	s 🕼 🕼 👍	ab 函 函 ⊕ ↔>	
Ē	寝 Navigator 🛛 👻 🗙	🚺 Invoice.dtd 🗙		
55		Element Name	Content Model	Attributes 🔺
	E-12 XMLTest	el Invoice	(Header, Item+)	
	Invoice.dtd	el Header	(Date, BillTo)	invoiceNumb
	Si PurchaseOrder.x	⊲ eb Item	description	price, discou
	🗁 🔁 📈 LTest2	k el ⊳ Date	((Month, Day, Year) (Day,	
		∉l ⊳ BillTo	Address	custNumber,
		el description	#PCDATA	
	Mariata Pasadaia	el Address	(street1, street2?, city, (sta	
	Navigator Repositories	els street1	#PCDATA	
	📑 Outline 🛛 🗙	els street2	#PCDATA	<u> </u>
		▲		
		Design Source		
	ten molece ten molece	😨 Tasks (0 items	s) <	% ≈ ‡ ×
	ien ltem	C ! Descr		Resource
	(*) descripti		iptori	Tresource
	Date			
				_



XSD Editor

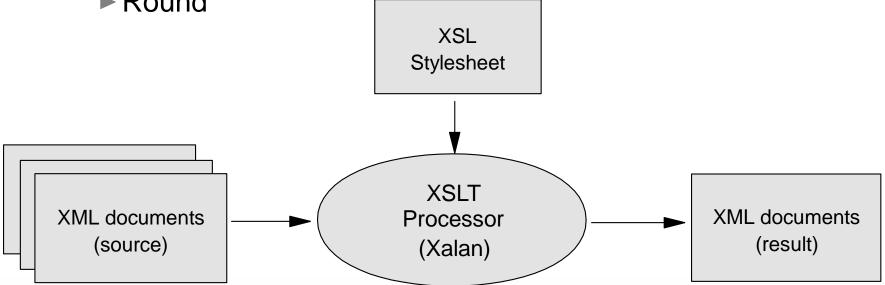
- Create, Import XSD
- Validation
- Generate DTD, DDL file from XSD
- Define complex type, simple type, element, attribute, attribute group, group etc.
- Context sensitive popup actions

No u	'eb - Application Developer
File	
÷	·
	PurchaseOrder Comment C ! Description C ! Description
-	Tasks Properties



XML to XML Mapping Editor

- Convert XML data from one definition type to another
- Visually defines the mapping between source and target
- Generates XSL that represents the transformation
- Hides the complexity of creating XSL
- Allows user to define functions for converting between source and target
 - Substring
 - String-length
 - Round



XSL Trace

- Apply XSL to XML document
 - Step Forward
 - Step Back
 - Watch flow of XSL
- Type of Output
 - XML document result
 - HTML output result

n Developer	
oject XSLTrace <u>W</u> indow <u>H</u> elp	
◆ ♠ 毫	
🗲 XSL Trace Editor 🗙	
N Result XML	Input XML (Contact.xml)
xml version="1.0" encoding="UTF-8"? <member> <address> <address> <addressline>I150 Eglinton Ave<addressline>Station 4T<city>Toronto</city> <state>Ontario</state> <zip>M1C 5C2</zip> <country>Canada</country> </addressline></addressline></address></address></member>	<pre><?xml version="1.0" encoding="UTF-8"?></pre>
Input XSL (Member.xsl)	
<address> AddressType> AddressType> (xst:value-of select="preceding-sibling: (AddressType> (xst:for-each select="Street"> (xst:for-each select="tevt0"> (vst:value-of select="tevt0"></address>	_



- Workbench integration occurs through a pluggable adapter based configuration:
 - Open framework allows any SCM provider to add adapter to integrate their SCM into the Workbench
 - CVS Plugin
 - WebDAV enabled adapter planned over time
- Built-in <u>Team Perspective</u>

Web Services Tooling

- Easily Construct Web Services:
 - Discover
 - -Browse UDDI registry to locate existing web services
 - -Generate JavaBean Proxy for existing web services
 - Create/Transform
 - Create new Web Services from JavaBeans, databases, etc.
 - Deploy
 - Web Service to WebSphere or TomCat for testing
 - ► Test
 - Built-in test client allows for immediate testing of local/remote Web Services
 - ► Publish
 - Web Services to UDDI registry

Testing: Server Perspective

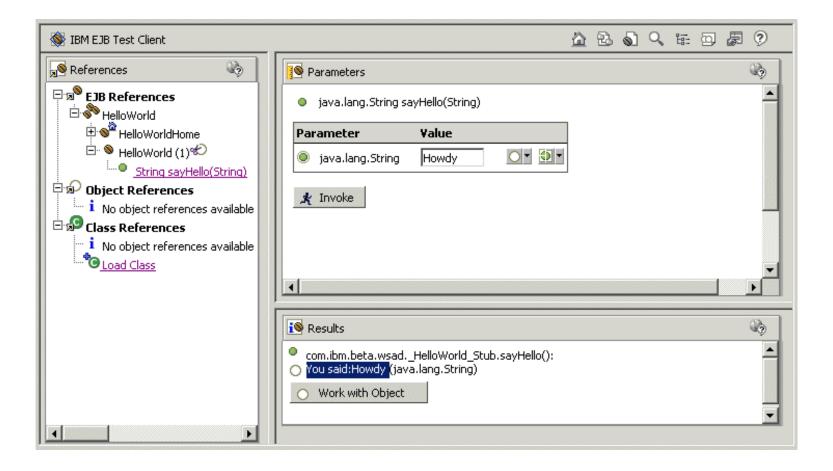
- Repackaged WAS AE Single Server included (Runs EJBs, JSPs, Servlets, and HTML files)
- Supports Web projects, EJB projects, EAR project
- Can be Unit Test, Local Unit Test, Remote Unit Test
- If Remote Unit Test, must install:
 - WebSphere Application Server
 - IBM Remote Agent Controller
- Is the default server type for all projects
- When Unit Test, changes made to files are saved to disk, detected, and reread by WAS (except EJB Interface changes)

Server Perspective



💥 Server - Application Developer 🚽		
File Edit Perspective Project Wir	ndow Help	
▲ ▲ ● ■ + ●	ふ ※ 記 メ	
🖺 📴 Navigator 🗇 🗘 👻 🗙	♣EJB Test Client ×	
AutoWorldExample	IBM EJB Test Client	<u>2</u> 2 5 9 4 9 5 9
🚆 📴 😅 DB2Sample	🛆 Homepage	ц.
DB2SampleWeb DB2SampleWeb DB2SampleWeb DB2Sample DB	The JNDI Explorer allows you to view the JNDI namespace and load EJB beans, data sources, and UserTransaction for testing	The EJB page allows you to view and invoke methods of loaded EJB Home and Remote interfaces, as well as other objects and classes used in testing
EJB Sample Server Project	The Inspector page allows you to view the fields of any object, as well as the value of any public fields	Hierarchy page allows you to select which methods and fields are visible on a given class. This allows you to selectively view only the methods you want to test
	The JNDI Objects page allows you to view information on data sources, and access the UserTransaction for controlling client-side transactions	The Properties page allow you to connect to a remote JNDI server or add additional JNDI Properties
Server Configuration ×	Console	1
EJB Sample Server B Server Configurations EJB Sample Server B Server Configurations B B Sample Server B B Sample Server B B Sample App	[02.01.26 11:52:21:716 GMT+01:00] 5 [02.01.26 11:52:22:497 GMT+01:00] 5 [02.01.26 11:52:23:248 GMT+01:00] 5 [02.01.26 11:52:23:528 GMT+01:00] 5 [02.01.26 11:52:24:039 GMT+01:00] 5 [02.01.26 11:52:24:149 GMT+01:00] 5	55e24400 ServletEngine A SRVE0169I: 55e24400 SystemOut U Getting tem 55e24400 WebGroup I SRVE0091I: 55e24400 WebGroup I SRVE0091I: 55e24400 HttpTransport A SRVE0171I:
	•	Þ
	Servers Debug Processes Console Variables	
	4	

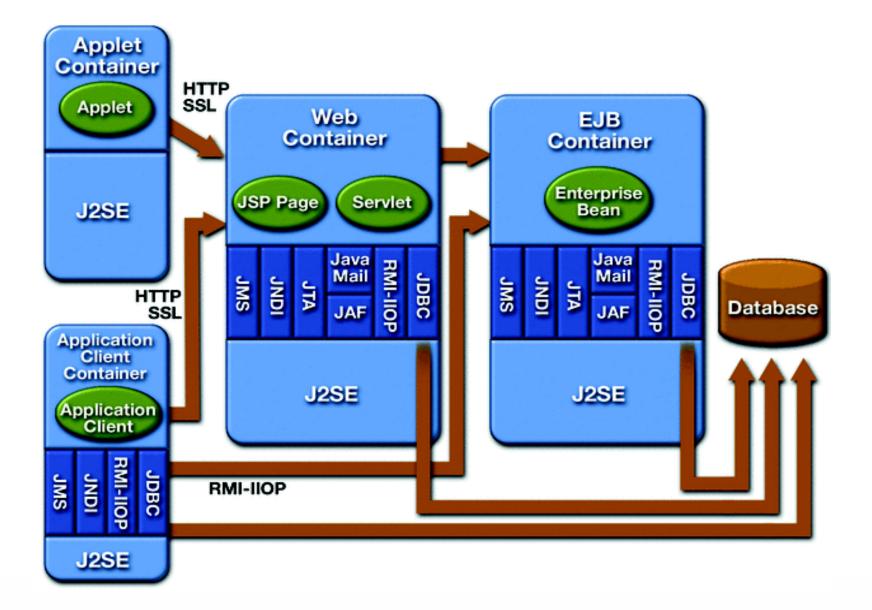
EJB Test Client

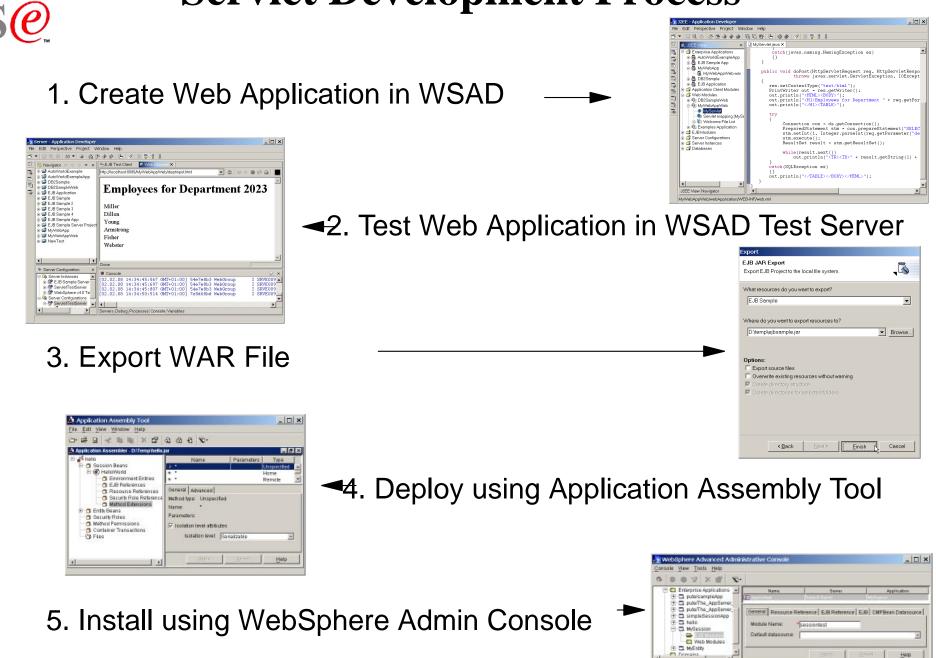


VA Java Project Migration

- Import Wizard will be added to the New Tooling
 - Wizard will import the VAJ Project(s) into the new tooling
- Work is being done for additional migration support
- Coexistence support for current/new tooling
 - Usage scenario documents

Development - J2EE Containers





Time

7/16/01 8:17 AM Console Read

Event Message

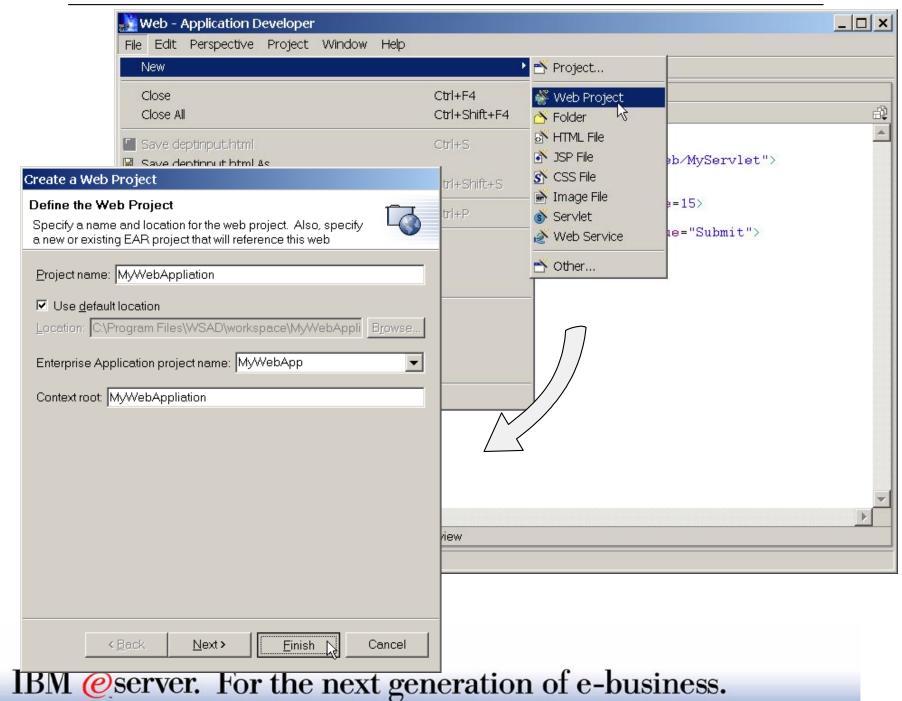
Outions

Details.

Type

Servlet Development Process

In Web Perspective: Create Web Project



Create Servlet 1/2

Web - Application Developer File Edit Perspective Project Toolbar Insert	Format Daga	Tools Window Help		<u> ×</u>
New		Project		
Close Close All	Ctrl+F4 Ctrl+Shift+F4	ở Web Project ☆ Folder	<u>u</u> a a <u>R</u> ^L	
Save deptinput.html	Ctrl+S	of HTTML File of JSP File		Ê
Save Frame	Ctrl+Shift+S	🛐 CSS File 🎽 Image File	Web∕MyServlet">	
🚔 Print	Ctrl+P	- 💕 Servlet ♂ Web Service	ze=15>	
 Import Convert Links Export 1yWebAppWeb/webApplication/deptinput.htm 2ple Server Project/ServletTestServer.wsc 3ple Server Project/ServletTestServer.wsi 4 MyWebAppWeb/source/MyServlet.java 	1	Other	lue="Submit">	
Exit UB Comparison (Comparison) Exit UB Comparison (Comparison				
	Preview			

Create Servlet 2/2

Create the Servlet Class

Create the Servlet Class



Specify a name and package location for the new Servlet class. Also, indicate any modifiers, interfaces, or methods to be generated.

Folder:	/MyWebAppWeb/source	Brows	se	🗹 Add to v
Package:		(default) Brows	se	
Servlet Name:	MyServlet			Display na
Superclass:	javax.servlet.http.HttpServlet	Brows	se	Mappings:
	✓ public □ abstract □ final □ Use Single Thread Mode			
Interfaces:		Add		Init Parame
Which method		getSer∨letInfo() doDelete()		
	< Back Next > Finish	Cancel		

Define the Servlet in the Deployment Descriptor (web.x) S Identify any information that should be inserted into the Deployment Descriptor (web.xml) file for the servlet. veb.xml? .me: MyServlet URL Add MyServlet Delete

nit Parameters:	Initialization parame	Value	
	myParm1	hallo	Add
	-		Delete

Next >

<u>F</u>inish

Cancel

Create the Servlet Class

< Back

Implement Servlet Code

<pre>File Edit Perspective Project Window Hep</pre>	J2EE - Application Developer
<pre> J2EE View x J2EE View x J2EE View x</pre>	File Edit Perspective Project Window Help
<pre>// catch (javax.naming.NamingException ex)</pre>	
MyWebAppWeb/webApplication/WEB-INF/web.xml	<pre> Description Descriptin Descriptin Descriptin Descriptin Descript</pre>

Create HTML File

Close Close All	Ctrl+F4 Ctrl+Shift+F4	🚳 Web Project 🔤 🔤 🐴	
Save MyServlet.java 🖳 Save MyServlet.java As	Ctrl+S	or HTML File j ISP File pt Sr CSS File	
Save All	Ctrl+Shift+S Ctrl+P	—— 🛃 Image File	rvletException
control its formatting in a web browser, optionally spe Enter or select the folder: MyWebAppWeb/webApplication		.InitialContext ctx = sql.Da Fource)ctx.loc ng.Nan Exception ex) st(Http://vletRequest_reg.	kup([†] jdbc∕HELLO
E MywenAnnwen			
- 🗁 source		Resource In Folder	Locat
	B Test fi	th for mod DB2Sam or module EJB Appli radeAcce VehicleAc AutoWorld nail Styles Colors	IEvamnle/eih line 10

Implement HTML File

<pre> •</pre>	Edit Perspective Project	Toolbar Insert Format Page Tools Window Help	
Image: Navigator Image: MyServletjava Image: MyServletjava Image: MyServletjava Image: Bub Sample Image: MyServletjava Image: MyServletjava Image: MyServletjava Image: Bub Sample 2 Image: MyServletjava Image: MyServletjava Image: MyServletjava Image: Bub Sample 3 Image: MyServletjava Image: MyServletjava Image: MyServletjava Image: Bub Sample App Image: MyServletjava Image: MyServletjava Image: MyServletjava Image: Bub Sample Server Preference Image: MyServletjava Image: MyServletjava Image: MyServletjava Image: Bub Sample Server Preference Image: MyServletjava Image: MyServletjava Image: MyServletjava Image: Bub Sample Server Preference Image: MyServletjava Image: MyServletjava Image: MyServletjava Image: Bub Server Preference Image: MyServletjava Image: MyServletjava Image: MyServletjava Image: Bub Server Preference Image: MyServletjava Image: MyServletjava Image: MyServletjava Image: Bub Server Preference Image: MyServletjava Image: MyServletjava Image: MyServletjava Image: Bub Server Preference Image: MyServletjava Image: MyServletjava Image: MyServletjava	▼ 🗒 🚇 😂 🗳 🗳 🗳	S & S & (S & (S & (S & (S & (S & (S & (
<pre>deptinguthtml-Untitled deptinguthtml-Untitled deptinguthtml-Untitled deptinguthtml-Untitled deptinguthtml dep</pre>		» 圆铜铅铊 佳娃 丰丰佳 円 🗐 🗐 B I <u>U</u> A A 🛣	
<pre> EJB Sample EJB Sample FJB Sample FJB Sample 1 CHIML> 2(BODY) FEJB Sample 4 FTA-INF FTA-I</pre>			
	EJB Sample EJB Sample 2 EJB Sample 2 EJB Sample 3 EJB Sample 4 EJB Sample App EJB Sample Server Pr MyWebApp META-INF MyWebApp META-INF MyWebApp Metra-invector application MyWebAppWeb Source MyWebAppWeb MyWebAppWeb Source MyWebAppWeb Source MyWebAppIcation MyServlet.java webApplication MyServlet.java webApplication ServerPreference MyWebAppWeb Source MyWebAppIcation ServerPreference MyWebAppIcation MyServlet.java MySer	<pre>1<html> 2<body> 3 <form action="/MyWebAppWeb/MyServlet" method="POST"> 4 Enter Department ID: 5 6 <input name="deptid" size="15" type="text"/> 7 8 <input name="action" type="submit" value="Submit"/> 10</form> 10 11</body> 12</html></pre>	

Create Test Server 1/2

Services	ew select Create a new server instance and configuration at the same time CVS Data EJB J2EE Server Instance Server Instance Server Instance Server Instance Server Instance and Configu
Inew server instance and configuration at the same time	CVS
<pre>server instance and configuration at the same time Shift+F4 Application Clent Project Server Project Server Instance Server Instance Server Instance and Configu Server Instance I</pre>	Create a new server instance and configuration at the same time CVS Data EJB J2EE Server Instance Server Instance Server Instance and Configu
	 Java Plug-in Development Remote File Transfer Simple Web Web Services XML Examples
	<back next=""> Enish Cancel</back>

Create Test Server 2/2



Create a New Server I	Instance and Configuration	Create a New Server Instance and Configuration
Create a new server i Choose the properties fo	or the new server	WebSphere Server Configuration Settings Input settings for the new WebSphere server configuration.
Server n <u>a</u> me:	ServletTestServer	HTTP port number: 8080
F <u>o</u> lder:	EJB Sample Server Project 🔹 💌	
Server <u>i</u> nstance type:	WebSphere Servers WebSphere v4.0 Remote Server WebSphere v4.0 Test Environment Apache Tomcat TCP/IP Monitoring Server	
<u>T</u> emplate:	None	
Description:	Runs all J2EE projects directly out of the workspace.	
Server <u>c</u> onfiguration typ Te <u>m</u> plate: Description:	re: 📅 WebSphere v4.0 Configuration None Image: Configuration for WebSphere v4.0	
 	< Back Next> Einish Cancel	< <u>Back</u> Next> <u>Finish</u> Cancel

In Server Perspective: Create DataSource

	Server - Application Developer				_ 🗆 ×
File	Edit Perspective Project V	Vindow Help			
Ď	- 8 8 6 • 8 8	N & & E A			
Ê	🚼 Navigator 🗇 🗘 🐨 🗙	S EJB Test Client	ervletTestServer ×		
	AutoWorldExample AutoWorldExampleApp	JDBC driver list			_
5	🗄 🚰 DB2Sample	Db2JdbcDriver (COM.i	bm.db2.jdbc.DB2Connec	tionPoolDataSource)	Add
	🗄 😅 DB2SampleWeb	idbJdbcDriver (com.ib	🧵 Add a Data Source	e <mark>)</mark>	
Ð	EJB Application ⊕ BJB Sample		Na <u>m</u> e:	HELLODB	Edit
	EJB Sample 2 EJB Sample 3		JNDI name:	jdbc/HELLODB	
	⊕ 🚰 EJB Sample 4 ⊕ 🚰 EJB Sample App	Data source defined in the	<u>D</u> escription:		
取服	⊕ ☺ EJB Sample Server Project ☺ ☺ MyWebApp	Session Persistence (<u>C</u> ategory:		Add
	⊞- 🥵 MyWebAppWeb ⊕- 😂 NewTest		Databa <u>s</u> e name:		Edit
		1	Default user <u>I</u> D:		
	۲ ۲	Resource properties defir	Default user <u>p</u> assword:		
	Server Configuration ×	General Web EJB Datas	Minimum pool si <u>z</u> e:	1	
	E-Constances	🖳 Console	Maximum pool size:	10 Z	
			Connection timeout:	180	<u> </u>
	🗄 🚳 Server Configurations		ld <u>l</u> e timeout:	1800	
	⊟ 🗃 EJB Sample Server ⊕ 🚰 EJB Sample App	R	O <u>r</u> phan timeout:	1800	▼ ▶
	ServletTestServer	Servers Debug Processe	Statement cac <u>h</u> e size:	100	
			🗖 Disable auto connec	ction clean <u>u</u> p	
			Enable JTA		
					1
				OK 🔓 Cancel	



In J2EE Perspective: Add Project to Server Configuration

File Edit Perspective Project Windo	
Image: Server Instances Image: Server Instances	<pre>MyServletjava X { { { } {</pre>
J2EE View Navigator	💶 🥵 EJB Sample App
1 item selected	🚔 MyWebApp 🔪

Start HTML Page in Test Server

Web - Application Developer		>			
ile Edit Perspective Project Window Help					
▼ 🛛 🖳 🗛 🛛 🖳 👘 🍪					
🔚 Navigator 🔍 🗙	🔄 MyServlet.java 🔄 deptinput.html 🗙				
	deptinput.html - Untitled	ć			
AutoWorldExample AutoWorldExampleApp DB2Sample DB2SampleWeb DB2SampleWeb EJB Application EJB Sample 2 EJB Sample 3 EJB Sample 4 EJB Sample App EJB Sample App EJB Sample Server Proje MyWebApp MyWebApp MyWebApp MyWebAppWeb Comparison MyServlet.java Comparison Compa	<pre>1<html> 2<body> 3 <form action="/MyWebAppWeb/MyServlet" method="POST"> 4 Enter Department ID: 5 6 <input name="deptid" size="15" type="text"/> 7 8 <input name="action" type="submit" value="Submit"/> 10</form> 10 10 11</body> 12</html> 13 </pre>				
⊞- 2 NewTest		•			
	Design Source Preview				

Invoke Servlet via POST



🔆 Server - Application Developer		_ 🗆 ×
File Edit Perspective Project V	/indow Help	
≝ • • • • • • • • • •	下 み 诊 貼 メ 茴 📮 🕈 📱	
🖆 隆 Navigator 🗇 🔿 🕆 🗙	Set EJB Test Client Veb Browser ×	
AutoWorldExample → 2 ³ AutoWorldExampleApp	http://localhost:8080/MyWebAppWeb/deptinput.html 💽 💿 🖙 🗢 🔘	🧇 🖴 🔳
AutoWorldExampleApp DB2Sample DB2SampleWeb DB2SampleWeb EJB Application EJB Sample 2 EJB Sample 3 EJB Sample 4 EJB Sample App EJB Sample App EJB Sample Server Project MyWebApp MyWebApp MyWebAppWeb MyWebAppWeb MyWebAppWeb	Enter Department ID: 2023 Submit	
Server Configuration × Server Instances ⊕ ⊕ EJB Sample Server		✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
	[02.02.08 14:33:12:053 GMT+01:00] 55a3e8b0 WebGroup I [02.02.08 14:33:12:533 GMT+01:00] 55a3e8b0 HttpTransport A	
⊕-∰ WebSphere ∨4.0 Te ⊡	[02.02.08 14:33:12:583 GMT+01:00] 55a3e8b0 Server A	WSVR002
🖻 🗑 ServletTestServer 🗨		
	Servers Debug Processes Console Variables	

Servlet Output



Server - Application Developer		_ 🗆 ×
ile Edit Perspective Project W	/indow Help	
š ▼ 🛛 🔍 🗛 õi ▼ 🎱 😫 🗄	下 み 豕 臣 メ 臣 👼 🕈 🗿	
Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system	EJB Test Client Web Browser × http://localhost:8080/MyWebAppWeb/deptinput.html	⇒ ● � ≜ ■
 DB2Sample DB2SampleWeb EJB Application EJB Sample EJB Sample 2 EJB Sample 3 EJB Sample 4 EJB Sample App EJB Sample Server Project MyWebApp MyWebApp MewTest 	Employees for Department Miller Dillon Young Armstrong Fisher Webster	2023
Server Configuration × Server Instances EJB Sample Server ServletTestServer WebSphere v4.0 Te Server Configurations ServletTestServer VebSphere v4.0 Te	Done Console [02.02.08 14:34:45:567 GMT+01:00] 54e7e8b3 WebGroup [02.02.08 14:34:45:697 GMT+01:00] 54e7e8b3 WebGroup [02.02.08 14:34:45:807 GMT+01:00] 54e7e8b3 WebGroup [02.02.08 14:34:45:807 GMT+01:00] 54e7e8b3 WebGroup [02.02.08 14:34:45:807 GMT+01:00] 74e7e8b3 WebGroup [02.02.08 14:34:50:514 GMT+01:00] 7a8d68bd WebGroup Servers Debug Processes Console Variables	I SRVE009 I SRVE009 I SRVE009 I SRVE009 I SRVE009



Additional Information

VSE/ESA Home Page http://www.ibm.com/servers/eserver/zseries/os/vse/				
e-business for VSE/ESA customers http://www.ibm.com/servers/eserver/zseries/os/vse/ebus/home.html				
e-business Connectors User's Guide	SC33-6719			
Redbooks: •• e-business Connectivity for VSE/ESA	SG24-5950			
e-business Solutions for VSE/ESA	SG24-5662			
Servlet and JSP Programming	SG24-5755			

We appreciate your comments at : VSEESA@de.ibm.com

