

Build Quality Applications Faster, Better and Cheaper

Database Visual ARCHITECT Deployment Guide for Java

Access database with Object-Oriented technology



DB Visual ARCHITECT 4.0 Deployment Guide for Java

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Deployment Guide for Java

1

Deploying Standalone Java Application

Chapter 1 - Deploying Standalone Java Application

DB Visual ARCHITECT (DB-VA) can generate all Java code for accessing database, you do not need to write any SQL to insert, query, update or delete the record, hence you can develop quality standalone Java application much faster, better and cheaper. In this chapter we focus on deploying standalone Java application. If you want to know how to develop a quality standalone Java application, you can refer to the Programmer's Guide for Java - Chapter 1 Developing Standalone Java Application.

In this chapter:

- Compiling using Javac
- Compiling using Apache Ant
- Compiling using Script
- Executing Application

Compiling using Javac

After you have developed a standalone Java application in Eclipse or other tools, you may wonder how you can execute it. First of all, you need to compile all the classes in your Java application and then execute the class that contains the main method. In the following step, we assume you have installed Java SDK and make sure you have modified your PATH environment variable to include JAVA SDK bin directory. In the following steps of compile and execute, we will use the example in the Programmer's Guide for Java - Chapter 4 Developing Standalone Java Application.

1. When DB-VA generates Java codes, "classes", "lib" and "src" folders are created. The classes folder is empty, the lib folder contains the persistent library (orm.jar), and the src folder contains the configuration files and ORM-Persistable Java Classes. You can develop your code inside the src folder.



Figure 1.1 - The generated Source code

2. Use the "javac" command to compile .java files inside the src folder into intermediate bytecode files.

Example of compiling the School System:

D:\Development folder\SchoolSystem>javac -d classes -cp lib\orm.jar src\school\ .java src\system*.java src\system\dialog*.java src\ormsamples*.java Figure 1.2 - The compile script

javac - d classes - cp lib\orm.jar src\school*.java src\system*.java src\system\dialog*.java src\ormsamples*.java

-d - specify where to place the generated class files

-cp - specify where to find the user class files

The orm.jar must be including in the classpath when compiling the application.

3. After executing the "javac" command, class files are generated in the "classes" folder.



Figure 1.3 - The compiled classes

Compiling using Apache Ant

DB-VA provides the option to generate the Apache Ant file for compiling the Java code and copy the configuration files to the classes folder. We assume that you have installed Ant.

1. From menu bar, select Tools > Object Relational Mapping (ORM) > Generate Code ...to open the Database Code Generation dialog box.



Figure 1.4 - To generate code

2. Select generate Ant File in Code tab.

🔞 Database (Code Generation	
Gener <u>a</u> te :	Code only	×
Language :	Java	×
Outgut Path :	C:\project\School Pro	ject 💌 📖
Deploy To :	Standalone Applicatio	n 💌
Code Datab	base	
Error Handling	e l	Return false/null
Exception Han	dling :	Do not Show
Default Lazy C	ollection Initialization :	Lazy
Association Ha	ndling :	Smart 💌 😰
Persistent API	£	Factory Class
🗹 Generate 🕯	Criteria	Serializable
Cache Optic	ons Select Optiona	al Jar Advance Settings
Samples		Scripts
Sample		Ant File
Ser <u>v</u> let S	5ample	Batch (for Windows)
📃 Java Ser	rver Page (JSP)	Shell Script (for Linux)
Web Appli	cation Deployment Des Servlet Request : De	criptors (web.xml)
		QK Cancel Help

Figure 1.5 - Click the generate Ant file option

3. Click OK to generate the Java code and Ant file call build-dbva.xml.

The sample of generated Ant file (build-dbva.xml):

```
<?xml version="1.0"?>
<!--
Licensee: Demo
License Type: Purchased
-->
<project name="SchoolSystem" default="compile">
      <description>SchoolSystem</description>
      <property name="src.dir" location="src" />
      <property name="lib.dir" location="lib" />
      <property name="classes.dir" location="classes" />
      <property name="javac.debug" value="on" />
      <target name="compile" description="Compile SchoolSystem">
             <mkdir dir="${classes.dir}" />
             <javac srcdir="${src.dir}" destdir="${classes.dir}"
             debug="${javac.debug}">
                    <classpath>
                           <fileset dir="${lib.dir}" includes="*.jar"/>
                    </classpath>
             </javac>
             <copy todir="${classes.dir}">
                    <fileset dir="${src.dir}">
                           <exclude name="**/*.java" />
                    </fileset>
             </copy>
      </target>
      <target name="clean" description="Clean SchoolSystem">
             <delete dir="${classes.dir}" />
      </target>
      <target name="createSchema" description="Run create data schema sample">
             < java classname="ormsamples.CreateSchoolSystemDatabaseSchema" fork="true">
                    <classpath>
```

```
<fileset dir="${lib.dir}" includes="*.jar"/>
                           <pathelement location="${classes.dir}"/>
                    </classpath>
             </java>
       </target>
      <target name="createdata" description="Run create test data sample">
             <java classname="ormsamples.CreateSchoolSystemData" fork="true">
                    <classpath>
                           <fileset dir="${lib.dir}" includes="*.jar"/>
                           <pathelement location="${classes.dir}"/>
                    </classpath>
             </java>
      </target>
      <target name="retrievedata" description="Run retrieve data sample">
             <java classname="ormsamples.RetrieveSchoolSystemData" fork="true">
                    <classpath>
                           <fileset dir="${lib.dir}" includes="*.jar"/>
                           <pathelement location="${classes.dir}"/>
                    </classpath>
             </java>
       </target>
      <target name="deletedata" description="Run delete data sample">
             <java classname="ormsamples.DeleteSchoolSystemData" fork="true">
                    <classpath>
                           <fileset dir="${lib.dir}" includes="*.jar"/>
                           <pathelement location="${classes.dir}"/>
                    </classpath>
             </java>
      </target>
      <target name="dropschema" description="Run drop schema sample">
             <java classname="ormsamples.DropSchoolSystemDatabaseSchema" fork="true">
                    <classpath>
                           <fileset dir="${lib.dir}" includes="*.jar"/>
                           <pathelement location="${classes.dir}"/>
                    </classpath>
             </java>
      </target>
      <target name="listdata" description="Run list data sample">
             <java classname="ormsamples.ListSchoolSystemData" fork="true">
                    <classpath>
                           <fileset dir="${lib.dir}" includes="*.jar"/>
                           <pathelement location="${classes.dir}"/>
                    </classpath>
             </java>
       </target>
</project>
```

The Ant file contains different targets to perform different tasks for the project such as compile the source code, clean the generated bytecode class files in the classes folder, and execute the sample generated by DB-VA.

4. Use Command Prompt to go to the location of the build-dbva.xml file.

Type ant - version to confirm the Ant can be executed in Command Prompt.

D:\project\Scho Volume in driv Volume Serial	9:\project\School Project>dir/w Wolume in drive D is Data Volume Serial Number is 50E0-8E39					
Directory of D	:\project\School H	Project				
[.] build-dbva.xml [src]	[] [classes]	.classpath [lib]	.project SchoolSystem.ddl			
	4 File(s) 5 Dir(s) 33,317,4	4,397 bytes 104,672 bytes free				
D:\project\Scho Apache Ant vers	ol Project>ant -ve ion 1.6.5 compiled	rsion l on June 2 2005				

Figure 1.6 - The result of execute "ant -version" command

5. Type ant - file build-dbva.xml clean to delete all the bytecode class file in classes folder.



Figure 1.7 - The result of execute "ant - file build-dbva.xml clean" command

6. Type ant - file build-dbva.xml compile to compile all the source code in src folder.

D:\project\School Project>ant -file build-dbva.xml compile Buildfile: build-dbva.xml
compile: [mkdir] Created dir: D:\project\School Project\classes [javac] Compiling 30 source files to D:\project\School Project\classes [javac] Note: Some input files use unchecked or unsafe operations. [javac] Note: Recompile with -Xlint:unchecked for details. [copy] Copying 5 files to D:\project\School Project\classes
BUILD SUCCESSFUL Total time: 2 seconds

Figure 1.8 - The result of execute "ant - file build-dbva.xml compile" command

Compiling using Script

DB-VA not only generates the Ant File for compiling source code and executing sample, it can also generate the batch and shell script file.

Batch file - a file that allow MS-DOS and Microsoft Windows user to create a lists of command and/or programs to run once the batch file is executed. Batch file refer to scripts written for DOS and Windows.

Shell Script - a file containing operating system commands that are processed in a batch method, one at a time, until complete. Shell Script refers to scripts written for Unix shell.

1. Select generate Batch and Shell Script in Code tab of Database Code Generation dialog box.

Gener <u>a</u> te :	Code only	~
Language :	Java	
Outgut Path :	C:\project\School Pro	iject 💙 😳
Deploy To :	Standalone Applicati	on l
Code Datat	base	
Error Handling	1	Return false/null
Exception Han	dling :	Do not Show
Default Lazy C	ollection Initialization :	Lazy
Association Ha	ndling :	Smart 😪 👔
Persistent API	r -	Factory Class 🛛 🔽 🙎
🔽 Generate	Cr <u>i</u> teria	Serializable
Cache Opti	ons Select Optiona	al Jar Advance Settings
Samples	C. C. C.	Scripts
Sample		Ant File
Ser <u>v</u> let :	5ample	Batch (for Windows)
 <u>J</u> ava Server Page (JSP)		5hell Script (for Linux)
Web Appli	cation Deployment Dec	criptors (web yml)
	Servlet Dequest +	Eault/OFF) or
ניווקקס ואי	Der Her Kerbest i	CONSTRUCT N
		OK Cancel Help

Figure 1.9 - Generate Batch and shell script options

2. The Batch and Shell Script files are generated at the Output Path. The Batch and Shell Script can be used to compile Java source and execute the samples generated by DB-VA.

School Project					E	6
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		Name	Size	Туре 🔺	Date Modified	1
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		Colo		File Folder	12/29/2005 9:	29 AM
Other Places	*	SIC		File Folder	12/30/2005 10	0:51 A
our of the second	1000	III.dasspath	1 KB	CLASSPATH File	12/30/2005 10	0:38 A
		SchoolSystem.ddl	1 KB	DDL File	12/30/2005 11	0:38 A
Details	<u> </u>	CompleAll.bat	1 KB	MS-DOS Batch File	12/30/2005 1	1:29 0
		RunCreateSchoolSystemData.bat	1 KB	MS-DOS Batch File	12/30/2005 1	1:29 4
		RunCreateSchoolSyster/DatabaseSchema.bat	1 KB	MS-DOS Batch File	12/30/2005 1	1:29 A
		RunDeleteSchoolSystemData.bat	1 KB	MS-DOS Batch File	12/30/2005 1	1:29 4
		RunDropSchoolSystemDatabaseSchema.bat	1 KB	MS-DOS Batch File	12/30/2005 1	1:29 6
		RunListSchoolSystemData.bat	1 KB	MS-DOS Batch File	12/30/2005 1	1:29 6
		RunRetrieveAndUpdateSchoolSystemData.bat	1 KB	MS-DOS Batch File	12/30/2005 1	1:29 /
		Rundample.bat	1 KB	MS-DOS Batch File	12/30/2005 13	1:29 6
		🗐 .project	1 KB	PROJECT File	12/30/2005 11	0138 A
		CompleAl.sh	1 KB	SH File	12/30/2005 1	1:29 4
		RunCreateSchoolSystemData.sh	1 KB	SHFile	12/30/2005 1:	1:29 4
		TRunCreateSchoolSystemDatabaseSchema.sh	1 KB	SHEle	12/30/2005 1	1:29 6
		PunDeleteSchoolSystemData.sh	1 KB	SH File	12/30/2005 1	1:29 4
		RunDropSchoolSystemDatabaseSchema.sh	1 KB	SH File	12/30/2005 1	1:29 A
		RunUstSchoolöystemDeta.sh	3 KB	SHFIe	12/30/2005 1	1:29 0
		I RunRetrieveSchoolSystemData.sh	1 KB	SH File	12/30/2005 1	1:29 A
		I RunSample.sh	1 KB	SH File	12/30/2005 1	1:29 A

Figure 1.10 - The generated script files

- 3. The CompileAll.bat and CompileAll.sh is used for compile the source code generated by DB-VA.
- 4. Use Command Prompt to go to the Output Path location.



Figure 1.11 - The directory of the script files

5. In Windows, type CompileAll.bat to compile all the source code in the src folder and copy the configure files to the classes folder.



Figure 1.12 - Execute the script file

Executing application

After you have compiled the java files to class files, you still cannot execute the application yet because the configuration and mapping files for connecting the database is missing.

1. Copy the "**ormmapping**" folder in "**src**" folder to "**classes**" folder. The "**ormmapping**" folder contains the configuration files and the mapping files of the classes with database.



Figure 1.13 - copy the ormmapping folder to classes folder

2. Use the "java" command to execute the class which contains the "public static void main (String args[])" method.

Example of executing School System:

- Start > Run > type cmd and click OK to open the command prompt.
- Go to the development directory.
- Execute the java command



Figure 1.14 - Execute the sample program

>java - cp classes;lib\orm.jar system.SchoolSystemMain

"-cp" is a flag that tell the Java command to look for java class files.

system.SchoolSystemMain is the class that contains the "public static void main (String args[])" method.

3. The standalone application is executing now.





Deploying Enterprise Java Web Application to BEA WebLigic

Chapter 2 - Deploying Enterprise Java Web Application to BEA WebLogic

DB Visual ARCHITECT (DB-VA) provides different kinds of template for user to generate Java code. The template will optimize the configuration of generated Java Code and select jar files for different application server or standalone Java application. In this chapter, we will deploy enterprise Java web application to BEA WebLogic. When you deploy the web application on application server, you can select to use the JDBC or datasource to connect the database.

In this chapter:

- Introduction
- Preparing to Deploy to WebLogic 8.1/9.0
- Deploying Web Application to WebLogic 8.1
- Deploying Web Application to WebLogic 9.0
- Configuring Datasource on WebLogic 8.1
- Configuring Datasource on WebLogic 9.0
- Configuring Datasource Connection on DB-VA

Introduction

This document is based on the Programmer's Guide for Java - Chapter 3 Developing Java Enterprise Web Application example to demonstrate the deployment steps on a WebLogic Server. The Example of Programmer's Guide for java - Chapter 3 is deployed on a JBoss Server, we need to modify some configuration before deploy on a WebLogic Server. Finally, we will configure the web application to use the datasource connection provide by WebLogic server to connect to database.

Preparing to Deploy to WebLogic

Suppose you have downloaded the example of the Programmer's Guide for Java - Chapter 3 Developing Java Enterprise Web Application. You need to change the template of generate code before deploying on the WebLogic 8.1 Server.

1. From the menu bar, select **Tools > Object Relational Mapping (ORM) > Generate Code ...** to open Database Code Generation dialog box.



Figure 2.1 - To generate code

2. Change Deploy To option from JBoss Application Server to WebLogic Application Server 8.1/9.0

```
Deploy To : WebLogic Application Server 8.1/9.0
```

Figure 2.2 - Enter the deployment directory

DB-VA helps you to select the corresponding Optional Jar files and set datasource options.

Select Optional Jar	\mathbf{X}
Custom	~
ORM Core ASM Attribute ASM Attribute AMTLR 2.7.6 RC1 CGLIB bytecode generator 2.1.3 CGLIB bytecode generator 2.1.3 CGLIB bytecode generator 2.1.3 CGLIB bytecode generator 2.1.1 Standard TX API Standard TX API Standard DTA API CG491 Library 1.2.11 HC4cche 1.1 Proxool JDBC connection pool 0.9.0 Log41 Library 1.2.11 HC4cche 1.1 Proxool JDBC connection pool 0.8.3 OpenSymphony OSCache 2.1 Swarm cache 1.0 RC2 TreeCache clustered cache 1.2.2 alpha JGroups multicast library 2.2.8 Standard JAAS API (required by JCA) JBoss System (required by TreeCache)	
Disclude Database Driver	MB
Set as Default OK Cancel	

Figure 2.3 - Select Optional Jar dialog

3. Click **OK** to regenerate code.

Deploying Web Application to WebLogic 8.1

Now the orm.jar is updated and generate in JBoss Server deploy folder. You can copy the schoolsystem.war folder in JBoss Server deploy folder to the WebLogic 8.1 Server. The following is the steps to deploy on a WebLogic 8.1 Server.

- 1. Find the antlr.jar file from DB-VA installation Directory/ormlib folder.
- Modify startWebLogic.cmd in WebLogic server domain (WEBLOGIC _HOME\user_projects\domains\mydomain) to add the antlr.jar to server classpath.

The mydomain is a domain created by user to use Configuration Wizard provided by WebLogic.

This sample adds antlr.jar to classpath:

```
set CLASSPATH=C:\bea\user_projects\domains\mydomain\antlr.jar;%WEBLOGIC_CLASSPATH%;
%POINTBASE_CLASSPATH%;%JAVA_HOME%\jre\lib\rt.jar;%WL_HOME%\server\lib\webservices.jar;
C:\bea\user_projects\domains\mydomain\applications\SchoolProject\lib\mysql.jar;%CLASSPA
TH%
```

3. Copy the schoolsystem.war folder from JBoss server's deploy folder to the WEBLOGIC_HOME\user_projects\domains\mydomain\applications folder.

Elle Edit View Favorites	Iools Help			12
3 Back 🔹 🕤 🕘 🦻 🖇	iearch 🜔 Folders 🛛	* * 🗙 🍤 🛛	-	
Address 🔁 C:\bea\user_pro	jects\domains\mydomain	\applications 💌	3 Go	Links *
Name 🐣	Size	Туре	Dat	e Modified
😋 .winotdelete		File Folder	4/1	3/2005 4:48
schoolsystem.war		File Folder	1/2	9/2005 1:33

Figure 2.4 - The deployment directory

4. Start WebLogic Server. Start menu > All Program > BEA WebLogic Platform 8.1 > User Projects > mydomain > Start Server.



Figure 2.5 - To start the Application Server

5. Visit the School System application on WebLogic Server.

http://localhost:7001/schoolsystem

👻 Index Page - Mozilla Firefox	- 🗆 ×
Eile Edit View Go Bookmarks Iools Help	Ó
💠 • 🐵 • 🎯 😳 🗔 📊 http://localhost:7001/schoolsystem/ 📩 🔘 Go 🔀	
Index Page	<u>^</u>
Login Page	
Student Register Page	
Teacher Register Page	-
Done	li.

Figure 2.6 - the index page of the project

Deploying Web Application to WebLogic 9.0

1. Find antlr.jar file in the DB-VA installation Directory\ormlib folder.

Modify setDomainEnv.cmd in WebLogic server domain "bin" folder (WEBLOGIC_HOME\user_projects\domains\base_domain\bin) and add the antlr.jar to classpath.

The mydomain is a domain created by user to use Configuration Wizard provided by WebLogic. This sample adds antlr.jar to classpath:

```
set CLASSPATH=DBVA_HOME\ormlib\antlr.jar;%PRE_CLASSPATH%;%WEBLOGIC_CLASSPATH%;
%POST_CLASSPATH%;%WLPOST_CLASSPATH%;%WL_HOME%\integration\lib\util.jar;
C:\bea9.0\user_projects\domains\base_domain\autodeploy\SchoolProject\lib\mysql.jar;
```

2. Copy the schoolsystem.war folder from JBoss server deploy folder to WEBLOGIC_HOME\user_projects\domains\base_domain\autodeploy folder.

😂 C:\bea9.0\user_projec	ts\domains\base_	domain\autodepl	oy	- 🗆 ×
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🔾 Back 🔹 🕥 🕘 🌮 Sei	arch 🌔 Folders 🛛	* >* × 19 [D •	
Address 🛅 C:\bea9.0\user_pr	ojects\domains\base_o	domain\autodeploy	💌 🛃 Go	Links »
Name -	Size	Туре	Date Modifie	d
🗊 readme.txt	3 KB	Text Document	12/7/2005 4:	18 PM
choolsystem.war		File Folder	1/29/2005 1:	:56 PM
				100

Figure 2.7 - The deployment directory

3. Start WebLogic 9.0 Server. Windows Start > All Program > BEA Products > User Products > base_domain > Start Admin Server for WebLogic Server Domain

BEA 3Rockit(R) 3RE 5.0 Update 3 (R25.2	.0) +	TextPad			
💼 BEA Products		Examples			
BEA WebLogic Platform 8.1		in Tools	•		
m DbaMGR2k		S Online Documentation			
Dell OpenManage Applications		QuickStart			
D IBM	•	Uninstal BEA Products	8		
TIBM DB2		WebLogic Server 9.0			
IBM WebSphere		G User Projects		💼 base_domain 🔸	Admin Server Console
m Informix Dynamic Server 9.40	•			and here	Start Admin Server For Weblogic Server Domain
Microsoft .NET Framework SDK v1.1	•				🔯 Stop Admin Server

Figure 2.8 - To start the Application Server

4. Visit the SchoolProject application on WebLogic Server.

http://localhost:7001/schoolsystem

	Mozilla Fin	fox	
jie Edit Yiew Gr	o Bookmark	: Iools Help	0
🖡 - 🕸 - 🔗 🖸	23 🗋 h	tp://localhost:7001/schoolsystem/ 💌	0 co [C.
Student Pa	ge		
Welcome, Amy Wong, Login id:Amy	modify pe informatio	rsonal logout	
Course Title	Teacher	State	
	A		
Math Course2	Kevin Chan	register course	
Math Course2 French Language Course	Kevin Chan nick cole	register course register course	

Figure 2.9 - The student Page

Configuring Datasource on WebLogic 8.1

WebLogic 8.1/9.0 server can provide a datasource for application to share the JDBC connection within the server. The following steps teach you how to configure datasource on WebLogic server.

 Add the JDBC driver for the classpath of the startWebLogic.cmd in WebLogic server domain (WEBLOGIC _HOME\user_projects\domains\mydomain). You can find the JDBC driver in schoolsystem.war\WEB-INF\lib. In this example we use the MySQL database, so you need to get the mysql.jar JDBC driver in the lib folder.

This Sample adds the JDBC driver to classpath:

```
set CLASSPATH= C:\bea\user_projects\domains\mydomain\antlr.jar;%WEBLOGIC_CLASSPATH%;
%POINTBASE_CLASSPATH%;%JAVA_HOME%\jre\lib\rt.jar;%WL_HOME%\server\lib\webservices.jar;
C:\bea\user_projects\domains\mydomain\applications\schoolsystem.war\lib\mysql.jar;%CLAS
SPATH%
```

2. Go to WebLogic Server Administration Console (<u>http://localhost:7001/console/login/LoginForm.jsp</u>), type in username and password to login.

here the Bookmake	Tools Mala	
1 0	saltant. 2001/servers/lapt/sepifices.inp	- 0 × C.
VebLogic Server	6.1	6
WabLo Sign in th	gic Server Administration Console was with the WebLaps Server stream systemile	
Darmar		
Paumat	nd:	
	(1997) Carl	

Figure 2.10 - The Login page of BEA WebLogic

3. Select mydomain > Services > JDBC > Connection Pools



Figure 2.11 - Select the connection pool

4. Select Configure a new JDBC Connection Pool



Figure 2.12 - Configure the connection pool

5. Select Database Type and Database Driver and click Continue

Database Type MySQL

Database Driver using com.mysql.jdbc.Driver

			1004030		
Configure a JDBC C					
Choose database					
he following steps will help eployment options later if	p you create and you wish. Select	I deploy a connection p t the database type an	iool. You can change cor d driver for your new conr	figuration information a rection pool.	and
Database Type	MySOL				
Database Driver	MySOL's Dry MySOL's Dry Other	ver (Type 4) Versions ver (Type 4) Versions	using org git min mysql [ovor Insven	
Note: Not all driver your driver is not lis	s in the list are in sted, select man	nstailed. You may near r	d to install the driver you	select beføre you can i	use it. If

Figure 2.13 - Select the Database Driver

6. Fill in the Connection Properties and click Continue

localhost	
Name	MySQL Connection Pool
Database Name	schoolproject
Host Name	
Port	3306

Database User Name root



Figure 2.14 - Enter the Database Configuration

7. Click **Test Driver Configuration**. It will show the success message. Click **Create and Deploy** button to finish setup. Now the **MySQL Connection Pool** is created.

Consule Consule	mydomaine uDBC Connection Pools> Configure	de? illa 🎧
Charlens	Connected to . Realthest 7001 You are logged in as . Sit Logged	
Mathota III Deployments B Disences	Connection successful	
E Studet	Configure a JDBC Connection Pool	
El Contection Posts El NutiFosts	Create and deploy	
D Data Source Factories R D Jule D Data Source Factories R D Jule D Volta(H5555 D Volta(H5555 D Volta(H5555	Does a only one serve in the density. The supressing of white control and displaying the d^{\prime} phy weak	get. You can recordigare depkyment
E Discuty Constructor Nets		Coaste and depty
Tasks		

Figure 2.15 - The database connection successful message

8. Select the mydomain > Services > JDBC > Data Sources



Figure 2.16 - Select the Data Sources

9. Click Configure a new JDBC Data Sources



Figure 2.17 - Configuration a new JDBC Data Sources

10. Enter the Data Source information and click Continue

Name N	MySQL Data	Source
--------	------------	--------

JNDI Name app/schoolsystem

JNDI path bound Honor Global Transactions



Figure 2.18 - Configure the Data Sources

11. Select the previously created MySQL Connection Pool and click Continue



Figure 2.19 - Connect to the connection pool

12. Select this Data Source for myserver. Click Create to finish setup.



Figure 2.20 - Select the target Data Sources



Figure 2.21 - Manage the Data Source

Configuring Datasource on WebLogic 9.0

1. Add the JDBC driver for the classpath of the **setDomainEnv.cmd** in WebLogic server domain "bin" folder (WEBLOGIC_HOME\user_projects\domains\base_domain\bin). In this example, we use the MySQL database; you can find the JDBC driver in **schoolsystem.war\WEB-INF\lib\mysql.jar**.

This sample adds the JDBC driver to classpath:

```
set CLASSPATH=DBVA_HOME\ormlib\antlr.jar;%PRE_CLASSPATH%;%WEBLOGIC_CLASSPATH%;
%POST_CLASSPATH%;%WLP_POST_CLASSPATH%;%WL_HOME%\integration\lib\util.jar;
C:\bea9.0\user_projects\domains\base_domain\autodeploy\schoolsystem.war\lib\mysql.jar;
```

2. Go to WebLogic Server Administration Console (<u>http://localhost:7001/console/login/LoginForm.jsp</u>), type in username and password to login.



Figure 2.22 - The Login page

3. Before configure any setting, you need to click the Lock & Edit button to modify, add or delete items in this domain



Figure 2.23 - Lock an Edit the site

4. Select JDBC > Data Sources

Donain Structure	>Recent Task Status	> Set your console preferences	
bsse_domain ® Environment —Deployments © Genoree		> Kead the documentation	
Security Realms E-Interoperability E-Diagnostics	Domain Configurations Domain	Services	Interoperability
kaw da I 🛅	# Domain	# Messaging > 3MS Servers	# WTC Servers # Jolt Connection Pools
Use the Change Center View pending changes Nelease the configuration lock Change Censule configuration	Environment # Servers	 Store-and-Forward Agents JMS Modules Bridges 	Diagnostics
Monitor servers	Clusters Virtual Hosts Micratable Targets	tobc > <u>Data Sources </u>	# Log Files # Diagnostic Modules # Diagnostic Images
Health of Running Servers	# Machines # Work Maraners	Data Source Factories	# Archives # STAP: Anort

Figure 2.24 - Select Data Sources

5. Click **New** to create data source

ome > Summary of JDBC Data Sources		
Summary of JDBC Data Source	is	
A XDBC data source is an object connections. Applications can loc a data source. This page summarizes the XDBC I customize this table	bound to the 3NDI tree that provides data ak up a data source on the 3NDI tree and data source objects that have been crea	base connectivity through a pool of JDBC then borrow a database connection from ted in this domain.
Data Sources		
New Delete		Showing 0 - 0 of 0 Previous Next
Name Name	JNDI Name	Targets
	There are no items to display	
New Delete		Showing 0 - 0 of 0 Previous Next

Figure 2.25 - The Data Sources summary

6. Enter the New JDBC Data Source Properties

Name	MySQL Data Source
JNDI	app/schoolsystem

Database Type MySQL

Database Driver using com.mysql.jdbc.Driver

ck Next	Firsh	
IDBC Data Sour	e Properties	
The following pro	perties will be used to identify your new JDBC data source.	
What would y	ou like to name your new JDBC data source?	
Name:	MySQL Data Source	
What JNDI na	me would you like to assign to your new JDBC Data Source?	
	app/schoolsystem	
JNDI Name;		
	e type would you like to select?	
What databas		
What databas Database Ty	pe: MySOL	
What databas Database Ty What databas	pe: MySOL e driver would you like to use to create database connections?	
What databas Database Ty What databas	pe: MySOL driver would you like to use to create database connections?	3

Figure 2.26 - Create a New Data Sources

7. Select the transaction of the data source to follow the diagram below:



Figure 2.27 - Transaction options

8. Enter the Connection Properties

Database Name	e schoolsystem
Host Name	localhost
Port	3306
Database User	root
Connection Properties Define Connection Properties. What is the name of datab	ase you would like to connect to?
Database Name:	schoolsystem
What is the name or IP add	dress of the database server?
Host Name:	localhost
What is the port on the dat	tabase server used to connect to the database?
Port:	3306
What database account us	er name do you want to use to create database connections?
Database User Name:	root
What is the database acco	unt password to use to create database connections?
Password:	
Confirm Password:	
Back Next Finish	Cancel

Figure 2.28 - The Connection Properties

9. Click **Test Configuration** to test the connection properties and settings. If the settings are correct, it will show the succeeded message.



Figure 2.29 - The Connection successful message

10. Select the target of the setting data source; click Finish to create JDBC Data Source.



Figure 2.30 - Select target server

JDBC data source is an object bou onnections. Applications can look u data source.	nd to the JNDI tree that provides databa p a data source on the JNDI tree and the	se connectivity through a pool of JDB an borrow a database connection fro
his nace summarizes the 10BC dat	a source objects that have been created	I in this domain.
no page summa neer the seve out		
Customize this table		
 Customize this table Data Sources 		
Customize this table Cata Sources New Delete		Showing 1 - 1 of 1 Previous New
Customize this table Data Sources New Delete T Name	JNDI Name	Showing 1 - 1 of 1 Previous Nex Targets

Figure 2.31 - The Data source is added

11. Click Activate Changes button to apply the New Data Source Change setting for WebLogic Server



Figure 2.32 - Activate Change

Configuring DataSource Connection on DB-VA

You have setup the datasource on the WebLogic 8.1 and 9.0 and JNDI name called "app/schoolsystem". You can configure the datasource connection to make the web application to use the datasource on the server.

1. From the menu bar, select **Tools > Object Relational Mapping (ORM) > Generate Code ...** to open the Database Code Generation dialog box.



2. Select the **Database** tab and select the **Connection** option from **JDBC** to **Datasource**.

🐵 Database C	ode Ger	eration	X
Gener <u>a</u> te :	Code an	d Database	~
Language :	Java		✓
Outgut Path :	ver 4.0.3	SP1\server)	default\deploy\schoolsystem.war\WEB-INF 💌
Deploy To :	WebLogi	c Application	n Server 8.1/9.0
Code Databa	ase		
Ge <u>n</u> erate Datat	oase :	Create Dal	abase 💌
Export to d	atabase	<u>G</u> enera	te DDL
Quote SQL Ider	ntifier:	Default(Au	to) 🗸
<u>C</u> onnection :		Datasouro	•
-Datasource-			
Dialect :			org.hibernate.dialect.MySQLInnoDBDialect 🗸
Datasource J	NDI Name	:	
JNDI Provider	URL :		
JND <u>I</u> InitialCo	ntextFact	ory class :	
User name : Bacsword :			
TransactionM	anageri o	nkun dass :	ansaction WeblogicTransactionManagerLookun
TransactionE	actory clas		
In an Baccion	accory cia.		
			QK Cancel Help

Figure 2.34 - The generate database configure for Data source

3. Enter the following information to configure the datasource of WebLogic Server

Dialect org.hibernate.dialect.MySQLInnoDE	
Datasource JNDI Name	app/schoolsystem
JNDI Provider URL	t3://localhost:7001
JNDI InitialContextFactory class	weblogic.jndi.WLInitialContextFactory
User name	(WebLogic Server login user name)
Password	(WebLogic Server login password)

 $Transaction Manager Lookup\ class\ org.hibernate.transaction.Weblogic Transaction Manager Lookup\ class\ org.hibernate.transaction Manager Lookup\ org.hibernate.transaction Manager Manager Lookup\ org.hibernate.hibernate.hibernate.hiberna$

org.hibernate.transaction.JTATransactionFactory

Datasource	
Dialect :	.hibernate.dialect.MySQLInnoDBDialect 🗸
Datasource JNDI Name :	app/schoolsystem
JNDI Provider URL :	t3://localhost:7001
${\tt JND\underline{I}}\ {\tt InitialContextFactory}\ {\tt class}:$	weblogic.jndi.WLInitialContextFactory
User name :	kit
Pass <u>w</u> ord :	•••••
<u>T</u> ransactionManagerLookup class :	on.WeblogicTransactionManagerLookup 🗸
TransactionEactory class :	ate.transaction.JTATransactionFactory 🗸

Click **OK** to regenerate the code.

TransactionFactory class

4. Copy the new configuration files from **schoolsystem.war\src\ormmapping** folder to **schoolsystem.war\classes** folder.

Follow the steps of **Deploy Web Application to WebLogic 8.1** or **Deploy Web Application to WebLogic 9.0** to redeploy the web application. After that it will use the datasource to connect to database in the WebLogic server.



Deploying Enterprise Java Web application to IBM WebSphere

Chapter 3 - Deploying Enterprise Java Web Application to IBM WebSphere

DB Visual ARCHITECT (DB-VA) provides different kinds of templates for users to generate Java code. The template will optimize the configuration of generated Java code and select jar files for different application servers or standalone Java application. In this chapter, we will deploy enterprise Java web application to IBM WebSphere. If the application server supports datasource, you can also configure DB-VA to use datasource connection to connect the database on the server. In this chapter:

- Introduction
- Preparing to Deploy to WebSphere
- Deploying Web Application to WebSphere
- Configuring Datasource on WebSphere
- Configuring Datasource Connection on DB-VA

Introduction

This document is based on the Programmer's Guide for Java - Chapter 3 Developing Java Enterprise Web Application example to demonstrate the deployment step on the WebSphere Server. The Example of Programmer's Guide for java - Chapter 3 is deployed on the JBoss Server, we need to modify some configuration before deploy on the WebSphere Server. Finally, we will configure the web application to use the datasource connection provide by WebSphere server to connect to database.

Preparing to Deploy to WebSphere

Suppose you have downloaded the example of the Programmer's Guide for Java - Chapter 3 Developing Java Enterprise Web Application. You need to change the template of generated code before deploy on the WebSphere Server.

1. From the menu bar, select **Tools > Object Relational Mapping (ORM) > Generate Code ...** to open Database Code Generation dialog box.



Figure 3.1 - To generate code

2. Change Deploy To option from JBoss Application Server to Generic Application Server.

```
Deploy To :
```

Generic Application Server



DB-VA helps you to select the corresponding Optional Jar files and set datasource options.

🐵 Select Optional Jar	\times
Custom	<
ORM Core	~
ASM bytecode library	
SM Attribute	
ANTLR 2.7.6 RC1	
CGLIB bytecode generator 2.1.3	
Commons Collections 2.1.1	
Standard JTA API	
Standard Extension JDBC APIs	=
C3P0 JDBC connection pool 0.9.0	
V Log4j Library 1.2.11	
EHCache 1.1	
Proxool JDBC connection pool 0.8.3	
OpenSymphony OSCache 2.1	
Swarm cache 1.0 KC2	
TreeCache clustered cache 1.2.2 apha	-
Standard 3C0, ADI	
Standard JCA API	
Boss System (required by Tree(asbe)	
Boss Common (required by TreeCache)	~
Instrude Database Driver	MD
Li Incique Dacabase Driver Estimate size: 3.89	MB
Set as Default OK Cancel	

Figure 3.3 - Select Optional Jar

3. Click **OK** to regenerate code.

Copy the **schoolsystem.war\src\ormmapping** folder to **schoolsystem.war\classes** folder to make sure the configuration files are also updated.

Deploying Web Application to WebSphere

Now the orm.jar is updated and generated in the JBoss Server deploy folder.

- 1. Open the command prompt to the schoolsystem.war folder in the JBoss deploy folder.
- 2. Execute jar to create a war file in command prompt.

The command to create a war file:

jar - cvf schoolsystem.war .

The schoolsystem.war file is created inside the schoolsystem.war folder

schoolsystem.war		201
le Edit Yew Favorites	Jook Help	
these in Manual Colorest	and the state of t	
File and Folder Tasks	💌 🍘 web-the	.classpath C.ASSPATH File
Other Places	theory theory	Course-tap
Details	110	288
	JSP File 2YB	339 FW 1.KB
	modfyUser.jsp 2147 File	studentPage.(sp 33P File
	studentreg.html	teacherPage.jsp
	1 NB	2×8
	HTML Document	HU4. Opcument. 1 KE
	schooleysten.wor	

Figure 3.4 - The war file

3. Startup WebSphere Application Server 6. Start menu > All Program > IBM WebSphere > Application Server v6 > Profiles > AppSrv01 > Start the server.

m Eell OpenManage Applications	•			
main and a second secon				
13M D62				
IIM Java Web Start v1.4.2	•			
📸 1341 WebSphere	Application Server vii	Profiles	🛚 🛅 default	•
Informix Dynamic Server 9.40	Application Server v6.0	Information center	AppSevil1	Administrative console
Microsoft .NET Framework SDK v1.1	Application Server Community Edition	n 🔹 👩 Online support	-	First steps
Microsoft .NET Framework SDK v2.0	•	Profile creation wizard		Samples Gallery
m Microsoft Developer Network	•			🚮 Start the server
Microsoft SQL Server 2000 Driver for 3DBC	•			D Stop the server
m Norosoft SQL Server 2005	•			Start the serve

Figure 3.5 - Start the Server

4. Go to Administration Console (<u>http://localhost:9061/ibm/console</u>) to login (note that the port number for some WebSphere users may not be 9061, so replace it with the correct one in such case).



Figure 3.6 - Login page

5. Select Applications > Install New Application to install the schoolsystem.war file



Figure 3.7 - Install New Application

6. Select the War file and fill in the Context Root (schoolsystem)



Figure 3.8 - Select the file

7. Click Next to finish the installation.

8. Click Save to Master Configuration and click Save in this page to apply all changes.

Installing
If there are enterprise beans in the application, the EJB deployment process can take several minutes. Please do not save the configuration until the process completes.
Check the SystemOut log on the Deployment Manager or server where the application is deployed for specific information about the EJB deployment process as it occurs.
ADMA5016I: Installation of schoolsystem_war started.
ADMA5067I: Resource validation for application schoolsystem_war completed successfully.
ADMA5058: Application and module versions validated with versions of deployment targets.
ADMA5005I: The application schoolsystem_war is configured in the WebSphere Application Server repository,
ADMA5053: The library references for the installed optional package are created.
ADMA5005i: The application schoolsystem_war is configured in the WebSphere Application Server repository.
ADMA50011: The application binaries are saved in C. Program Files/BMW/ebSphere/AppServer/profiles/AppSrv01 wstemp1106198/workspace/cells/562811xNode02Celllapplications/schoolsystem_war.ear/schoolsystem
ADMA5005I: The application schoolsystem_war is configured in the WebSphere Application Server repository.
SECJ0400I: Successfuly updated the application schoolsystem_war with the appContextDForSecurity information.
ADMA5011I: The cleanup of the temp directory for application schoolsystem_war is complete.
ADMA5013I: Application schoolsystem_war installed successfully.
Application schoolsystem_war installed successfully.
To start the application, first save changes to the master configuration.
Save to Master Configuration
To work with installed applications, click the "Manage Applications" button.
Manage Applications
Figure 3.9 - the successful deploy message

9. Start the new deploy SchoolProject Web Application. Select Applications > Enterprise Application.



Figure 3.10 - Select Enterprises Application

10. Select schoolsystem_war and click the Start button to startup the Web Application on the server.

Lists instal	lled applications. A single application can be di nces	eployed onto multiple	e servers,			
Start	Stop Install Uninstall Update	Rollout Update	Remove File	Export Export DDL		
BD	T 19					
Select	Name C	Status 🖞	2			
E.	DefaultApplication		*			
F	PlantzByWebSphere	*				
F	SamplesGallery.	*				
Г	istApp.	*				
(T)	guery.	\$				
	schoolsestern war	*				

Figure 3.11 - Select the Web Application

11. Go to (http://localhost:9081/schoolsystem/index.html) to confirm the web application is running



Figure 3.12 - The index page

Configuring Datasource on WebSphere

The WebSphere server can provide a datasource for application to share the JDBC connection within the server. The following steps teach you how to configure datasource on WebSphere server. We will configure the MySQL datasource on WebSphere server as an example.

1. Go to Administration Console (http://localhost:9061/ibm/console) to login.



Figure 3.13 - The Administrator Console

2. Select Resources > JDBC Providers



3. Click New button to create MySQL JDBC provider

DBC prov	iders		
DBC provi	ders are used by the installe	d applications to	o access data from databases.
] Scope:	Cell=5628l1xNode02Cell, No	de=kit	
C Cell : 5628l1×Node02Cell → ⓒ Node : kit		Scope specifies the level at which the resource definition is visible. For detailed information on what scope is and how it we define the second section of the second	
	hour me	·····	
C	Server : server1		
Apr	shu		
App	ly		
Ap;	nces		
App Prefere	nces		
App Prefere New	nces Delete		
App Prefere New	Delete		
App Prefere New © © elect	ly nces Delete Name ≎		Description 🗘
App Prefere New P	Nome Orace JDBC Driver		Description ≎ Oracle JDBC Driver
Ap; Prefere New C	Name \$ Orade JDBC Driver Orade DDBC Driver (XA)		Description ≎ Oracle JDBC Driver Oracle JDBC Driver (XA)
App	Name \$ Oracle JDBC Driver Oracle JDBC Driver User-defined JDBC Provide		Description ≎ Oracle JDBC Driver Oracle JDBC Driver (XA) Custom JDBC2.0-compliant Provider configuration

Figure 3.15 - the JDBC Provider

4. In Choose a type of JDBC provider, set all options to User-defined

JDBC provider s	? -
<u>JDBC providers</u> > New Choose a type of JDBC provider to create.	
Configuration	
Seneral Properties Step 1: Select the database type User-defined Step 2: Select the provider type User-defined JDBC Provider Step 3: Select the implementation type User-defined Next Cancel	-

Figure 3.16 - Create a new JDBC provider

5. Fill in general properties and click **Apply**.

Name	MySQL JDBC provider
Classpath	$C:\DevelopApps\jboss-4.0.3SP1\server\default\deploy\schoolsystem.war\WEB-INF\lib\mysql.jar$
Implementation class name	com.mysql.jdbc.jdbc2.optional.MysqlConnectionPoolDataSource

		will not be available until
cells:562811xNo	de02Cellinodes:kit	this item are saved.
Name MySOL JDBC Pro	vider	= Data sources
Bausiakian.		Data sources
Custom JDBC2. configuration	D-compliant Provider	
Class path C:\DevelopApps	lyboss-4.0.3SP1\server	
	•	
Native library pa	th	

Figure 3.17 - The General Properties

6. Select the **Additional Properties > Data sources** on the right hand side.

anaral Properties	satella des una
aneral Properdes	Additional Properties
Scope	E Data sources
cells:5628l1xNode02Cell:nodes:kit	Cata sources
	(Version 4)
Name	L'ALIMANT 41

Figure 3.18 - The Additional properties

7. Click the New button to create new MySQL Data source.



Figure 3.19 - New a Data source

8. Fill in new MySQL Data source information and click Apply

me	MySQL Datasourc	e
DI name	app/schoolsystem	
ata store helper class name Select a data store helper class		
onfiguration		
General Properties		The additional properties
* Scope		will not be available until the general properties fo
cells:5628l1×Node02Cell:nod	es:kit	this item are saved.
* Name MySQL Datasource		Connection pool properties
JNDI name app/schoolproject		 WebSphere Application Server data source properties
Use this Data Source in co Description	ntainer managed persistence (CMP)	Custom properties
		Related Items
		Related Items J2EE Connector Architecture (J2C) authentication
Category		Related Items J2EE Connector Architecture (J2C) authentication data entries
Category Data store helper class name		Related Items J2EE Connector Architecture (J2C) authentication data entries
Category Data store helper class name © Select a data store help	er class	Related Items J2EE Connector Architecture (J2C) authentication data entries
Category Data store helper class name © Select a data store help Data store helper class	er class ≥s provided by WebSphere Application	Related Items J2EE Connector Architecture (J2C) authentication data entries
Category Data store helper class name © Select a data store help Data store helper class Server Server	er class as provided by WebSphere Application per	Related Items J2EE Connector Architecture (J2C) authentication data entries
Category Data store helper class name © Select a data store help Data store helper class Server Generic data store help (com.ibm.vebspher	er dass es provided by WebSphere Application per e.rsadapter.GenericDataStoreHelper)	Related Items J2EE Connector Architecture (J2C) authentication data entries
Category Data store helper class name C Select a data store help Data store helper class Server Com.ibm.vebspher C Specify a user-defined of Enter a package-qualifi	er dass es provided by WebSphere Application per e.rsadapter.GenericDataStoreHelper) data store helper ed data store helper dass name	Related Items J2EE Connector Architecture (J2C) authentication data entries

9. Select the Additional Properties > Custom properties on the right hand side.

Test connection	
General Properties	Additional Properties
+ Scope	I. Constitution of
cells:5628l1×Node02Cellinodes	it properties
+ Name	WebSphere
MySQL Datasource	data source
JNDI name	Custom
app/schoolsystem	- Custom

Figure 3.21 - The additional Properties

10. Click the New button to create the new property

Custom properties that example, most databas access the database. Preferences	may be required for re e vendors require add	isource providers and res itional custom properties	ource factories. For for data sources that
New Delete			
00			
Select Name 🗘	Value 🗘	Description 🗘	Required
None			
Total 0			

Figure 3.22 - Create a new property

11. Add url property and click OK to create the url property

Name url

Value jdbc:mysql://localhost/schoolsystem

Configuration
General Properties
* Scope
cells:5628l1×Node02Cell:nodes:kit
F Required
* Name
url
Value
Idbc:mysql://localnostyschoo
Description
Type
java.lang.String 🔽
Apply OK Reset Cancel

Figure 3.23 - Enter the property information

12. Click Save to apply all previous JDBC and datasource setting

🖻 Messages	
Δ Changes have been made to your local configuration. Click changes to the master configuration.	<u>Save</u> to apply
The server may need to be restarted for these changes to the server may need to be restarted for these changes to the server may need to be restarted for these changes to the server may need to be restarted for the server may need to be restar	take effect.
The GenericDataStoreHelper class does not contain any error mapping, so it may not perform as the application expects.	or exception
	urce
A data source is used by the application to access data from the database. A da JDBC provider, which supplies the specific JDBC driver implementation class.	ta source is created under a
Configuration	
Test connection	
General Properties	Additional Properties
* Scope	
cells:5628l1×Node02Cell:nodes:kit	Connection pool properties
	WebSphere
* Name	Application Server
MySQL Datasource	data source
JNDI name	<u>Dispercies</u>
app/schoolproject	properties
	E P

Figure 3.24 - To save the property

13. Select the **J2EE Connector Architecture (J2C) authentication data entries**. It can create the data entries of username and password to connect to database.

	Additional Properties
Scope	E Connection soul
cells:5628i1xNode02Cell:nodes:kit	properties
Name MySQL Datasource	 WebSphere Application Server data source properties
JNDI name	= <u>Gustom</u>
Use this Data Source in container managed persistence (CMP) Description	Related Items

Figure 3.25 - Select J2EE Connector Architecture (J2C) authentication data entries

14. Click New to create the user IDs and password.



Figure 3.26 - Create a new user ID and password

15. Enter the Alias, User ID and Password and click Apply to save and return to the MySQL Datasource Page.

cifies a list of user IDs	and passwords for Java 2 connector security to use.
figuration	
Seneral Properties	
+ Alias	
MySql username and	d passwo
Aurona	
User ID	
root	
* Decement	
Password	
Description	

Figure 3.27 - Enter information for create user

16. Select the previously created username and password on Container-managed authentication and then click Apply.

(none)	the
wthentScatises allas fer XA recovery [™] Urse component-managed authentication allas [™] Specify:	val the 'De Usi 4
	Pa <u>Mo</u> the
nshiner-managed authentication Container-managed authentication alias (deprecated in V6.0, use escurce reference authentication settings instead) kn/MySql username and password +	
(none)	

Figure 3.28 - Select the Container-managed authentication

17. Select the MySQL Datasource to Test connection



Figure 3.29 - Select Test connection

18. The test connection is successful



Figure 3.30 - The connection successful message

Configuring the Datasource on DB-VA

You have setup the datasource on the WebSphere and JNDI name called "app/schoolsystem". You can configure the datasource connection to make the web application to use the datasource on the Server.

1. From the menu bar, select **Tools > Object Relational Mapping** (**ORM**) **> Generate Code** ... to open the Database Code Generation dialog box.



Figure 3.31 - To generate code

2. Select the **Database** tab and select the **Connection** option from **JDBC** to **Datasource**.

🕲 Database C	ode Ger	eration	X
Gener <u>a</u> te :	Code an	d Database	▼
Language :	Java		
Outgut Path :	1.0.35P1	server\defa	ault\deploy\schoolsystem.war\WEB-INF\ 🛛 💽
Deploy To :	Generic A	Application S	5erver 💌
Code Datab	ase		
Generate Data	base :	Create Da	tabase 💌
Export to a	latabase	<mark>▼</mark> <u>G</u> enera	ate DDL
Quote SQL Ider	ntifier:	Default(Au	ito) 💌
Connection :		Datasourc	e 💌
-Datasource-			
Dialect :			org.hibernate.dialect.HSQLDialect 🗸 🗸
Datasource J	NDI Name	:	
JNDI P <u>r</u> ovider	r URL :		
JND <u>I</u> InitialCo	ontextFact	ory class :	
User name :			
TransactionM	lanageri o	okun dass i	
TransactionE	actory clar		bibernate transaction ITOTransactionEactory
in ansaction <u>r</u>	actory cla.		
			QK Cancel Help

Figure 3.32 - Database configuration for using Data sources

3. Enter the following information to configure the datasource on WebSphere Server

Dialect	org.hibernate.dialect.MySQLInnoDBDialect
Datasource JNDI Name	app/schoolsystem
JNDI Provider URL	(empty)
JNDI InitialContextFactory class	com.ibm.websphere.naming.WsnInitialContextFactory
User name	(connect database user name)
Password	(connect database password)
TransactionManagerLookup class	org.hibernate.transaction.WebSphereExtendedJTATransactionLookup
TransactionFactory class	org.hibernate.transaction.JTATransactionFactory
Datasource	

Dacasource	
Dialect :	.hibernate.dialect.MySQLInnoDBDialect 🔽
Datasource JNDI Name :	app/schoolsystem
JNDI Provider URL :	1
${\tt JND} \underline{{\tt I}} \ {\tt Initial ContextFactory\ class}:$	osphere.naming.WsnInitialContextFactory
<u>U</u> ser name :	root
Pass <u>w</u> ord :	••••
IransactionManagerLookup class :	SphereExtendedJTATransactionLookup 😒
TransactionEactory class :	ate.transaction.JTATransactionFactory 🗸

Click **OK** to regenerate the code.

- 4. Copy the new configuration files from **schoolsystem.war\src\ormmapping** folder to **schoolsystem.war\classes** folder and use the jar command to create a new war file.
- 5. Uninstall the schoolsystem application on WebSphere Application server.
- 6. Repeat the Deploying to WebSphere steps to redeploy the application. The web application can then use the datasource on the server to connect to database.

4

Deploying Enterprise Java Web Application to IBM WebSphere Community Edition

Chapter 4 - Deploying Enterprise Web Application to IBM WebSphere Community Edition

DB Visual ARCHITECT (DB-VA) provides different kinds of templates for users to generate Java code. The template will optimize the configuration of generated Java Code and select jar files for different application servers or standalone Java application. In this chapter, we will deploy enterprise Java web application to WebSphere Community Edition. Since WebSphere Application Server Community Edition is a new application server, DB-VA currently does not support its datasource connection.

In this chapter:

- Introduction
- Preparing to Deploy to WebSphere Community Edition
- Deploying Web Application to WebSphere Community Edition

Introduction

This document is based on the Programmer's Guide for Java - Chapter 3 Developing Java Enterprise Web Application example to demonstrate the deployment steps on the WebSphere Community Edition. Since the Example of Programmer's Guide for Java - Chapter 3 is deployed on the JBoss Server, we need to modify some configuration before deploying on the WebSphere Community Edition.

Preparing to Deploy to WebSphere Community Edition

Suppose you have downloaded the example of the Programmer's Guide for Java - Chapter 3 Developing Java Enterprise Web Application. You need to change the template of generate code before deploying on the WebSphere Community Edition.

1. From the menu bar, select **Tools > Object Relational Mapping (ORM) > Generate Code ...** to open the Database Code Generation dialog box.



Figure 4.1 - To generate code

2. Change the Deploy To option from JBoss Application Server to WebSphere Application Server Community Edition 1.0

<u>D</u> eploy To :	WebSphere Application Server Community Edition 1.0	*
	Figure 4.2 - Deployed To options	

DB-VA helps you to select the corresponding Optional Jar files and set datasource options.

🐵 Select Optional Jar	×
Custom	~
ORM Core	~
ASM bytecode library	
ASM Attribute	
ANTLR 2.7.6 RC1	
CGLIB bytecode generator 2.1.3	
Commons Collections 2.1.1	
🔽 Standard JTA API	
Standard Extension JDBC APIs	=
C3P0 JDBC connection pool 0.9.0	
✓ Log4j Library 1.2.11	
EHCache 1.1	
Proxool JDBC connection pool 0.8.3	
OpenSymphony OSCache 2.1	
Swarm cache 1.0 RC2	
TreeCache clustered cache 1.2.2 apha	-
Standard ICA ADI	
Standard JOAS API	
Boss System (required by TreeCache)	
Boss Common (required by TreeCache)	~
Technical Contraction Section 2.46	MD
Li Incique Dacabase Driver Estimate size: 3.46	MB
Set as Default QK Cancel	

Figure 4.3 - Select Optional Jar dialog

3. Click **OK** to regenerate code.

Copy the **schoolsystem.war\src\ormmapping** folder to **schoolsystem.war\classes** folder to make sure the configuration files are also updated.

Deploying Web Application to WebSphere Community Edition

Now the orm.jar is updated and generated in the JBoss Server deploy folder.

1. Copy the **antlr.jar** from the **DB-VA installation Directory\ormlib** folder to the **WEBSPHERE_HOME\lib\endorsed** folder.



Figure 4.4 - The antlr.jar copied to WebSphere home directory

2. Open the command prompt to the schoolsystem.war folder in the JBoss deploy folder.

3. Execute jar to create a war file in command prompt.

The command to create a war file:

jar - cvf schoolsystem.war .

The schoolsystem.war file is created inside the schoolsystem.war folder

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Back • 🔘 · 🔰 🖌	Search D	Folders .		
tess 🛅 🕻 if energedyseli	koy-4/0-3591	serveri default biepk vischoolsyst	(13), (Mát	× 🦻
File and Folder Tasks		WEB-INP	CLASSPATH Ne LKB	
Other Places		PROJECT File	course.jsp	
Details	٤	1 KB	288	
		JSP File 2 KD	SSP File	
		modfyUser.jp	studentPage.jg	8
		studentreg.html	teacherPage.is	
		teacherreg.html HIM: Document 118	index.html HTML Document	
	1	N at a faith and a second	Contraction of the local division of the loc	

Figure 4.5 - The schoolsystem.war

4. Start the WebSphere Application Server from system menu Start > All Programs > IBM WebSphere > Application Server Community Edition > Start the server

Maaba	•				
BEA JRockit(R) JRE 5.0 Update 3 (R25.2.0)	×				
🛅 BEA Products	►	IBM Java Web Start v1.4.2		•	
BEA WebLogic Platform 8.1	۲	🎒 IBM Java Plug-in Control Panel 1.4.2			
💼 DbaMGR2k	×				
💼 Dell OpenManage Applications	×				
🛅 ІВМ	×				
🛅 IBM DB2	×				
🛅 IBM WebSphere	►	Application Server v6	•		
💼 Informix Dynamic Server 9.40	⊁	Application Server v6.0	•		
Microsoft .NET Framework SDK v1.1	×	💼 Application Server Community Edition		Administrative console	
microsoft .NET Framework SDK v2.0	×			🕕 Information center	
💼 Microsoft Developer Network	×			🔕 Online support	
im Microsoft SQL Server 2000 Driver for JDBC	×			🚿 Start the server	

Figure 4.6 - Start WebSphere Application Server

5. Go to Administration Console (http://localhost:8080/Console) and enter user name and password

The default user name and password:

User name: System password: Manager Manager Methodist for the former of the former o



Figure 4.7 - WebSphere Application Server Login page

6. Select **Applications > All Configurations** on the left hand side menu.

👒 - 🚰 💭 斗 Θ http:/	//localhost/0000/consol	e/portal/apps/apps	_ol		· O 60	C.
onus da vite da cary	running	Step	Uninctall	org/apache/geronimo/RMINaming		
Web Server	running	Step	Uninital	org/apache/geronimo/ActiveMQServer		
EIB Server	running	Step	Uninstall	org/apache/geronimo/TorncatRuntimeDeployer		
MS Server	stopped	Start	Uninst all	org/apache/geronimo/DefaultDatabase		
12EE Connectors	running	Step	Uninztall	org/apache/geronimo/DebugConsole		
Sector Connectory	running	Step	Uninstall	org/apache/geronimo/Server		
CORBA/ IIOP	running	Step	Uninztall	org/apache/geronimo/Security		
UDDEServer	stopped	Start	Uninital	org/apache/geronimo/DeployerSystem		
Services	stopped	Start	Uninital	org/apache/geronimo/ClientSystem		
Common Libraries	stopped	Mart	Uninstall	org/apache/geronimo/ClientSecurity		
	running	Step	Uninstall	org/apache/geronimo/SystemDatabase		
Database Poors	stopped	Start	Uninstall	org/apache/geronimo/Client		
1M5	stopped	Start	Uninstall	org/apache/geronimo/Client/CCRBA		
Java Mail	stopped	Start	Uninstall	MysqLDs		
Applications	stopped	Start	Uninital	org/apache/geronmo/ServerCORBA		
All Configurations	running	Step	Uninital	org/apache/geronimo/SystemJMS		
An Contrigue doorts	stopped	Mart	Uninstall	org/apache/geronimo/OffineDeployer		
Application EAR5	running	Step	United all	org/apache/geronmo/RuntmeDeployer		
Web App WARs	running	Step	Uninztall	org/apache/geronimo/juddiserver/1.0-M5/Torricat		
EIB JARs	running	Stop	United	org/apache/geronmo/system		
J2EE Connectors	numing	Men	Ominal all	org/apache/geronmo/console/ / omcat		
App Clients	Install New	Applications				help [vic
System Modules	Archive:		Browse			
Security			Canada			
Console Realm	Plan:		Blowse_			
All Realms	2	Start app after in	stall			
		ctall]				
69551008						
Mise						

Figure 4.8 - To show all configuration

7. Select the SchoolProject war on the Archive file in Install New Applications block and click Install.

Install New Applications		<u>help</u> [view]
Archive: ploy/schoolsystem.wat	Browse	
Plan:	Browse	
🔽 Start app after install		
Install		

Figure 4.9 - Install new application

8. Install succeeded message is shown

Install New Applicatio	ns	<u>help</u> [view]
The application was s	uccessfully deployed.	
Archive:	Browse	
Plan:	Browse	
Start app afte	er install	
Install		

Figure 4.10 - The install successful message

9. Go to http://localhost:8080/schoolsystem/index.html. You can access the record from database by JDBC connection

Administrative Console	🗋 SI	udent page
Student Page	e	
Welcome, Amy Cha	n, Login id :Amy <u>m</u> o	dify personal information
PL		
ine available course:		
Course Title	Teacher	State
ne available course: Course Title <u>bccc</u>	Teacher P.C Cheung	State register course
ine available course: Course Title <u>bccc</u> <u>Math ec</u>	Teacher P.C Cheung P.C Cheung	State register course register course
ine available course: Course Title bccc Math ec a.cc	Teacher P.C Cheung P.C Cheung P.C Cheung P.C Cheung	State register course register course register course
ine avaliacie course: Course Title bccc <u>Math ec</u> a.cc a.	Teacher P.C Cheung P.C Cheung P.C Cheung P.C Cheung P.C Cheung	State register course register course register course register course

5

Deploying Enterprise Java Web Application to JBoss

Chapter 5 - Deploying Enterprise Java Web Application to JBoss

DB Visual ARCHITECT (DB-VA) provides different kinds of templates for users to generate Java code. The template will optimize the configuration of generated Java Code and select jar files for different application servers or standalone Java application. DB-VA supports to generate configuration file to make the web application use datasource connection to connect to database in the application server. In this chapter, we will deploy enterprise Java web application to JBoss Application Server.

In this chapter:

- Introduction
- Preparing to Deploy to JBoss
- Deploying Web Application to JBoss
- Configuring Datasource on JBoss
- Configuring Datasource Connection on DB-VA

Introduction

This document is based on the Programmer's Guide for Java - Chapter 3 Developing Java Enterprise Web Application example to demonstrate the deployment step on the JBoss Server. The Example of Programmer's Guide for Java - Chapter 3 is deployed on JBoss, so we will point out some of its important steps. Finally, we will configure the web application to use the datasource connection provide by JBoss application server to connect to database.

Preparing to Deploy to JBoss

Suppose you have downloaded the example of the **Programmer's Guide for Java - Chapter 3 Developing Java Enterprise Web Application**.

1. From the menu bar, select **Tools > Object Relational Mapping (ORM) > Generate Code...** to open the Database Code Generation dialog box.



Figure 5.1 - To generate code

¥

2. Set Deploy To option to JBoss Application Server.

```
Deploy To :
```

JBoss Application Server

Figure 5.2 - Set the Deploy To option

DB-VA helps you to select the corresponding Optional Jar files.

🕲 Select Optional Jar 🛛 🔛
JBoss Application Server Template
🔽 ORM Core 📃
ASM bytecode library
ASM Attribute
ANTLR 2.7.6 RC1
CGLIB bytecode generator 2.1.3
Commons Collections 2.1.1
Standard JTA API
Standard Extension JDBC APIs
C3P0 JDBC connection pool 0.9.0
Log4j Library 1.2.11
EHCache 1.1
Proxool JDBC connection pool 0.8.3
OpenSymphony OSCache 2.1
Swarm cache 1.0 RC2
TreeCache clustered cache 1.2.2 alpha
Groups multicast library 2.2.8
Standard JCA API
Bass Sustem (required by JCA)
Boss System (required by TreeCache)
Dooss common (required by freecacile)
L Include Database Driver Estimate size: 3.55 MB
Set as Default OK Cancel

Figure 5.3 - Select Optional Jar dialog

3. Click **OK** to regenerate code.

Copy the **schoolsystem.war\src\ormmapping** folder to **schoolsystem.war\classes** folder to make sure the configure files are also updated.

Deploying Web Application to JBoss

After developed the web application with the generated Java code, you must copy the web application folder (named "XXX.war", for example "schoolsystem.war") and to the JBoss deploy folder
 (JBOSS_HOME\server\default\deploy). For development of the Web Application, you can refer to the
 Programmer's Guide for Java - Chapter 3 Developing Java Enterprise Web Application.

Back • 🜍 • 🦻 🖇	🥬 Search 🜔 F	folders 🛄 •	
ress C:\DevelopApps\	boss-4.0.35P1\s	erver\defauit\deploy	× 🔁 🤇
File and Folder Tasks	*	.metadata	http-invoker.sor
Other Places	۲	- Annual Annual	Contrast data
Details	*	poss-acp. deptoyer	poss-bean.geployer
	E	bossweb-tomcat55.sar	iboss-wsfee.sar
	E	yns 🔰	Imx-console.war
	P		Contractory was

Figure 5.4 - Copy the generated code to JBoss deploy directory

2. Start the JBoss server. Execute the JBOSS_HOME\bin\run.bat.

3. Go to http://localhost:8080/schoolsystem/index.html. You can access the database by JDBC connection

🛊 • 🕸 - 🛃 🖸 🔳 🕰 🌊 ht	tp://localhost:8080/schoolsy	stem/studentPage.jsp
🗙 Deabler 🔊 CSSY 🙆 Former 🔬 I	noger 🕐 Réemation [🗄 Micolanious+ 🚀 Outine+ 🗖
🕻 Student page		
Student Page		
Welcome, Amy Wong, Login is	l:Amy <u>modify per</u>	sonal information logout
Course Title	Teacher	State
Math Course2	Kevin Chan	register course
French Language Course	nick cole	register course
Logistics Courses	Kevin Chan	register course

Figure 5.5 - Student Page

Configuring Datasource on JBoss

The JBoss server can provide a datasource for application to share the JDBC connection within the server. The following steps show you how to configure datasource on JBoss application server. We will configure the MySQL database on JBoss server as an example.

1. Copy the JDBC driver to the JBOSS_HOME\server\default\lib

In this example, DB-VA generated persistent libraries include orm.jar and mysql.jar. mysql.jar is the JDBC driver for MySQL database. mysql.jar can be found at schoolsystem.war\WEB-INF\lib.



Figure 5.6 - The lib directory of the .war

 Copy mysql-ds.xml from JBOSS_HOME\docs\example\jca to the deploy folder (JBOSS_HOME\server\default\deploy) and modify the content to follow the table below.

jndi-name app/schoolsystem
connection-url jdbc:mysql://localhost/schoolsystem
driver-class com.mysql.jdbc.Driver

. . . .

```
The sample of modified mysql-ds.xml:
```

```
<?xml version="1.0" encoding="UTF-8"?>
```

3. The JBoss server creates a datasource and bound it to JNDI name 'java:app/schoolsystem'.

```
09:35:37,453 INFO [ConnectionFactoryBindingService] Bound ConnectionManager 'jb
pss.jca:service=DataSourceBinding,name=app/schoolsystem' to JNDI name 'java:app/
schoolsystem'
```

```
Figure 5.7 - Create a datasource on JBoss Application Server
```

Configuring Datasource Connection in DB-VA

After configuring the datasource on the JBoss server, you can modify the generate Java code configuration to use the datasource connection to connect the database within JBoss server.

1. From the menu bar, select **Tools > Object Relational Mapping (ORM) > Generate Code ...** to open the Database Code Generation dialog box.



Figure 5.8 - To generate code

2. Select the **Database** tab and select the **Connection** option from **JDBC** to **Datasource**.

🐵 Database C	ode Ger	eration	X
Gener <u>a</u> te :	Code and	l Database	×
Language :	Java		~
Outgut Path :	C:\Docum	ents and Se	ttings\fung\My Documents\untitled 🛛 💌
Deploy To :	JBoss Ap	plication Ser	ver 🔽
Code Databa	ase		
Ge <u>n</u> erate Datat	oase :	Create Dat	abase 💌
Export to d	latabase	<u>G</u> eneral	te DDL
Quote SQL Ider	ntifier:	Default(Au	to) 🔽
Connection :		Datasource	•
-Datasource-			
Dialect :			org.hibernate.dialect.MySQLInnoDBDialect 💙
Datasource J	NDI Name	:	
JNDI Provider	r URL :		
JIND <u>I</u> InitialCo	IntextFact	ory class :	
Password :			
IransactionM	lanagerLoo	okup class :	e.transaction.JBossTransactionManagerLookup 🗸
TransactionE	actory clas	is :	ı.hibernate.transaction.JTATransactionFactory 🗸
			OK Cancel Help

Figure 5.9 - Database Configuration

3. Enter the following information to configure the datasource on JBoss Server.

Dialect	org.hibernate.dialect.MySQLInnoDBDialect
Datasource JNDI Name	java:app/schoolsystem
JNDI Provider URL	localhost:1099
JNDI InitialContextFactory class	org.jnp.interfaces.NamingContextFactory
User name	root
Password	(empty)
TransactionManagerLookup class	org.hibernate.transaction.JBossTransactionManagerLookup
TransactionFactory class	org.hibernate.transaction.JTATransactionFactory

Table 5.1

Datasource	
Dialect :	org.hbernate.dialect.MySQLInnoDBDial
Datasource JNDI Name :	java:app/schoolsystem
JNDI Provider URL :	lucalhost:1099
${\sf JND}\underline{{\sf I}}\ {\sf InitialContextFactory}\ {\sf class}:$	org.jnp.interfaces.NamingContextFactory
User name :	root
Pass <u>w</u> ord :	
TransactionManagerLookup class ;	action. JBossTransactionManagerLookup 🔽
Transaction <u>F</u> actory class :	ate.transaction.JTATransactionFactory 🗸

Click **OK** to regenerate the code.

- 4. Copy the new configuration files from **schoolsystem.war\src\ormmapping** folder to **schoolsystem.war\classes** folder and use the jar command to create a new war file.
- 5. Copy the web application folder to the JBoss deploy folder again, then it will redeploy and use the datasource to connect to the database.



Deploying Enterprise Java Web Application to Oracle Application Server

Chapter 6 - Deploying Enterprise Java Web Application to Oracle Application Server

DB Visual ARCHITECT (DB-VA) provides different kinds of templates for user to generate Java code. The template will optimize the configuration of generated Java code and select jar files for different application servers or standalone Java application. DB-VA supports to generate configuration file to make the web application to use datasource connection to connect to database in the application server. In this chapter, we will deploy enterprise Java web application to an Oracle Application Server.

- Introduction
- Preparing to Deploy to Oracle Application Server
- Deploying Web Application to Oracle Application Server
- Configuring Datasource on Oracle Application Server
- Configuring Datasource Connection on DB-VA

Introduction

This document is based on the Programmer's Guide for Java - Chapter 3 Developing Java Enterprise Web Application example to demonstrate the deployment steps on the Oracle application server. The Example of Programmer's Guide for Java - Chapter 3 is deployed on JBoss, so we will point out some important steps for user to modify to deploy on Oracle application server. Finally, we will configure the web application to use the datasource connection provide by the Oracle application server.

Preparing to Deploy to Oracle Application Server

Suppose you have downloaded the example of the **Programmer's Guide for Java - Chapter 3 Developing Java Enterprise Web Application**.

1. From the menu bar, select **Tools > Object Relational Mapping (ORM) > Generate Code ...** to open the Database Code Generation dialog box.



Figure 6.1 - To generate code

2. Set Deploy To option from JBoss Application Server to Generic Application Server.

```
Deploy To : Generic Application Server
```

Figure 6.2 - The Deploy to option

DB-VA helps you to select the corresponding Optional Jar files.



Figure 6.3 - select Optional Jar dialog

3. Click **OK** to regenerate code.

Copy the **schoolsystem.war\src\ormmapping** folder to **schoolsystem.war\classes** folder to make sure the configuration files are also updated.

Deploying Web Application to Oracle Application Server

Suppose you have installed the Oracle Application Server. In this example we will use Oracle Application Server 10g.

- 1. Open the command prompt and change to the schoolsystem.war folder in the JBoss deploy folder.
- 2. Execute jar to create a war file in command prompt.

The command to create a war file:

jar -cvf schoolsystem.war .

The schoolsystem.war file is created inside the schoolsystem.war folder

schoolsystem.war	Tasla Jula	E	
e gut yew revolues			-
J Back • 🕗 · 💋	Dearch Dearch		
idress 🙆 C:\App\jboss-4.0.;	2\server\default\deploy\schoolsystem.war	× 1	⇒ Go
File and Folder Tasks	WEB-INF	classpath CLASSPATH File 1 KB	
Other Places	.project	course.jsp	
Details	I KB	2 KB	
	SP File 2 KB	login.jsp JSP File 1 KB	
	inodfyUser.jsp JSP File 2 KB	studentPage.jsp JSP File 2 KB	
	teacherreg.html HTML Document 1 KB	UserberPage.jsp JSP File 2 KB	
	teacherreg.html	index.html HTML Document 1 KB	
	schoolsystem.war WAR File 3,600 kB		
biaste		2.60 KB	

Figure 6.4 - The .war file

3. Start the Oracle Application Server from system menu Start > Programs > Oracle Application Server 10g > Start



Figure 6.5 - Start Oracle Application Server

4. Go to the Application Server Control Console from system menu Start > Programs > Oracle - oracleas Enterprise Manager > Application Server Control Console or go to http://localhost:108100.

		Uracle - oracleas	•	
	New Office Document	🛅 🛛 Oracle - oracleas Enterprise Manager	٠	🗃 Application Server Control Console
	Open Office Document	 Oracle Application Server 10g - oracleas PointeCast 	+	10 Start Application Server Control Stop Application Server Control
	Set Program Access and Defaults	🛅 Sun Microsystems 耐 VIsual Paradigm	+	
1	Windows Catalog	🥭 Internet Explorer		
6	Windows Update	 Microsoft PowerPoint Microsoft Word 		
	Programs	TextPad ¥		

Figure 6.6 - To open the Application Server Control Console

5. Enter username and password to login. Select the **J2EE Applications** tab and then click **home** on **OC4J Instance** column to go to the OC4J Home page.

Oracle Enter	prise Manager - Appli	sation Sea	ver: oracleas.wi	ndowstesting - Micr	cooff Internet Explore	ir.	
A set of		(The		0.0.3			
Beer .	3 . M (M (A)	20 Searc	n 🗙 navorites in	6 8. G I	m . 🗁 🖘		
jihann 🔕 Nitor,	//windowstesting:18100/ema	(console/ias	/j2eeApplications\$typ	e-orade*_ias\$target-r	vaciess.windowstesting		💌 🔂 Go 🛛 Linka
ORACLE Application 5	Enterprise Manager 1 Server Control	Dġ				Low	Tapology Protoronata Hola
Application	Server: oracleas.	window	stesting				
Home	JZEE Applications	Ports	Infrastructure	Backup/Recovery			
						Page Refreshed D	ec 31, 2005 1:58:06 PM 💦
Namo					OC4J Instance		
ADFECMapag)供				2 tione		
2041					home		
sWebCacheV	Vorkina				home		
And the second							
Home	JZEE Applications	Ports	Infrastructure	Backup/Recovery			
opyright © 1956 Iosof Crincle Entr	, 2005, Creacle , All rights read	erveid Ion Server I	Loga Inneol	i Inpology i Profes	ancas Heir		
							S Local intranet

Figure 6.7 - Application Server Control Console

6. In the OC4J home page, select the Application tab and click Deploy WAR file.

Oracle Enterprise Manager - OC4J	home - Microsoft Internet Explorer				
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SelectName	Path	Parent Application	F Active Requests	Request Processing Time (seconds)	Active EJB Methods
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O BC4J	/applications/BC4J.ear	default	0	0.20	0
O IsWebCacheWorking	/applications/IsWebCacheWorking.ear	default.	0	0.00	. 0
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Figure 6.8 - To deploy WAR file

7. Select the schoolsystem.war file location and enter the Application Name and Map to URL information. The Map to URL must be start with /. After that, click **Deploy**.

Deploy Web Applica	tion				
Select the Web Applicatio	n (war file) you wish to deploy. This web a	pplication will be wrapped into a J2EE application (ear file)	before deplo	yment.	
Web Application	C1DevelopApps1jboss-4.0.3SP11server/def	auff/dept Browse			
Specify the name you wou	ld like this application to be called and the	URL to map this web application to.			
Application Name	schoolsystem				
Map to URL	/schoolsystem				
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Figure 6.9 - Enter the information of the WAR

8. When you see the successfully deployed message, the web application is running on the Oracle Application Server.

Application Server Control		L992	Topology	Enterences	Heip
Web application "schoolsystem" was success	fully deployed.				
					0
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Figure 6.10 - The deploy successful message

9. Use the Map to URL information to access your web application. Go to <u>http://localhost/schoolsystem/index.html</u>. You may have different port number for the application server.

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ddress http://localhost/school	system/studentPa	e.jsp	💌 🛃 Go Links
Student Page			
Welcome, Amy Wongs, Login id: Amy	modify per information	sonal logout	
The available course:			
Course Title	Teacher	State	
Math Course2	Kevin Chan	Registered	
French Language Course	nick cole	register course	
Logistics Courses	Kevin Chan	register course	

Figure 6.11 - The Student Page

Configuring Datasource on Oracle Application Server

The Oracle Application Server can provide a database for application to share the JDBC connection within server. The following steps teach you how to configure datasource on Oracle server. We will configure the MySQL datasource on Oracle server as an example.

1. Copy the mysql.jar to ORACLE_HOME/j2ee/home/applib. The mysql.jar can be found at the DB-VA generate output folder/schoolsystem.war/WEB-INF/lib.

The j2ee/home/applib directory contains libraries that are used by all applications on your application server. By dropping the MySQL JDBC drivers here, they can be used by all applications running on this OC4J instance.

2. Edit ORACLE_HOME/j2ee/home/configure/data-sources.xml to add your datasource.

```
<data-source
class="com.evermind.sql.DriverManagerDataSource"
name="MySQLDS"
location="app/schoolsystem"
ejb-location="jdbc/MySQLDS"
connection-driver="com.mysql.jdbc.Driver"
username="root"
password=""
url="jdbc:mysql://localhost/schoolsystem"
inactivity-timeout="30"
/>
```

3. Go to the OC4J home page to restart OC4J, the MySQL datasource is running on the Oracle application server now.



Figure 6.12 - Restart OC4J

Configuring Datasource Connection on DB-VA

You have setup the datasource on the Oracle and JNDI name called "app/schoolsystem". You can configure the datasource connection to make the web application to use the datasource on the Server.

1. From the menu bar, select **Tools > Object Relational Mapping (ORM) > Generate Code ...** to open the Database Code Generation dialog box.



Figure 6.13 - To generate code

2. Select the Database tab and select the Connection option from JDBC to Datasource.

Database Code Generation					
Gener <u>a</u> te :	Code and Database				
Language :	Java	×			
Outgut Path :	H.O.35P1\server\default\deploy\schoolsystem.war\WEB-INF\ 💽				
Deploy To :	Generic Application Server				
Code Databa	ase				
Ge <u>n</u> erate Database : 0		Create Database			
Export to database Generate DDL		Generate DDL			
Quote SQL Identifier:		Default(Auto)			
Connection :		Datasource 🗸			
-Datasource-					
Dialect :		org.hibernate.dialect.HSQLDialect			
Datasource JNDI Name :					
JNDI P <u>r</u> ovider URL :					
JNDI InitialContextFactory class :		tory class :			
User name :					
TransactionM	anageri o	okun class : bn.WebSphereExtendedTtATransactionLookun			
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		QK Cancel Help			

Figure 6.14 - Database Configuration

3. Enter the following information to configure the datasource on Oracle Application Server

Dialect	org.hibernate.dialect.MySQLInnoDBDialect
Datasource JNDI Name	java:comp/env/app/schoolsystem
JNDI Provider URL	(empty)
JNDI InitialContextFactory class	(empty)
User name	(connect database user name)
Password	(connect database password)
TransactionManagerLookup class	org.hibernate.transaction. OC4JTransactionManagerLookup
TransactionFactory class	org.hibernate.transaction.JTATransactionFactory

Datasource	
Dialect :	.hibernate.dialect.MySQLInnoD3Dialect 🗸
Datasource JNDI Name :	java:comp/env/app/schoolsystem
JNDI Provider URL :	
$JND\underline{I}$ InitialContextFactory class :	
User name :	root
Pass <u>w</u> ord :	
<u>T</u> ransactionManagerLookup class :	ction. OC4JTransactionManagerLookupx 🐱
Transaction <u>Factory</u> class	ate.transaction.JTATransactionFactory 🗸

Figure 6.15 - Datasource Configuration

Click $\boldsymbol{O}\boldsymbol{K}$ to regenerate the code.

4. Modify the Web.xml file in schoolsystem.war\WEB-INF folder to add resource-ref to the datasource.

<resource-ref> <res-ref-name>app/schoolsystem</res-ref-name> <res-type>javax.sql.DataSource</res-type> <res-auth>Container</res-auth> </resource-ref>

5. Undeploy the schoolsystem web application on the Oracle application server and then repeat the step of Deploying Web Application on Oracle Application Server to deploy the web application. The web application run on the Oracle server will use the datasource connect to database.