

Deploying POI Web Service

Introduction

The POIApp example code provided in this book consumes the web service API's developed in Java JAX-RS using REST architecture. The code bundle provided in this book includes POI Web Service project code under "Code_Bundle/ POIWebService.zip" location.

The code bundle contains the following files:

- **SQL executable:** The SQL executable file can be used to configure the database and create the required tables.
- **POIWebService directory:** This is a Java web service code that can be imported directly to eclipse.

This document illustrates the steps to deploy the Java web service code in your own development machine on Tomcat Application server.

Software perquisites

You need to install the following software's to deploy and test the Java Web services code.

- Java 1.6 or above
- MySQL Server
- Tomcat 6.x

Installing Java

Latest Java versions can be downloaded for free and installed on both Windows and Mac operating system. Please refer the following official java.com web site for the installation steps:

https://www.java.com/en/download/help/download_options.xml

Installing MySQL Server

MySQL is an open source Relational Database Management System (RDBMS) engine freely available for both Windows and Mac operating system. MySQL uses Structured Query Language (SQL). SQL is the most popular language for adding, accessing and managing content in a database. Because it is free, we prefer to use this for developing the POI Web service.

Refer official MySQL developer site for download and installation instructions specific for your operating system:

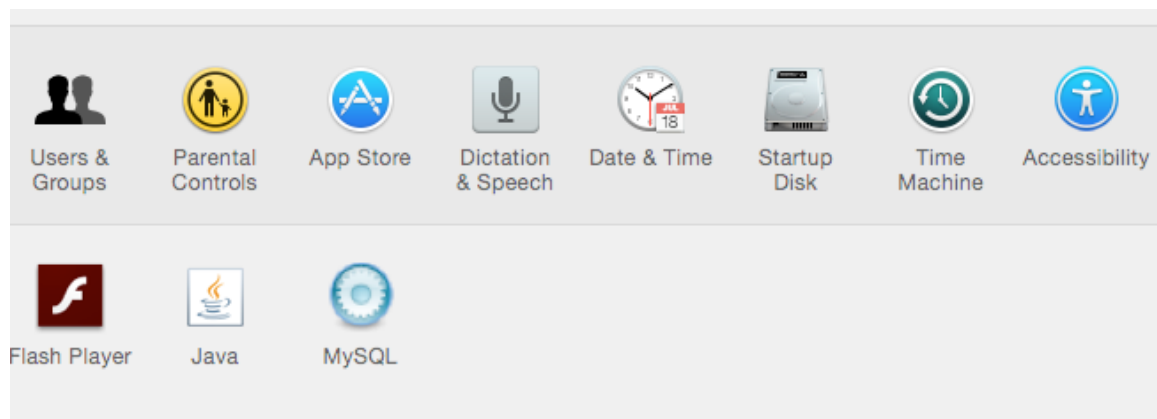
<https://dev.mysql.com/downloads/mysql/5.5.html>

After installation is complete you can start the server using windows command line or from system preference in Mac OS x. Windows users can find the instructions in the following link:

<https://dev.mysql.com/doc/refman/5.0/en/windows-start-command-line.html>

Mac users can start the MySQL server from System preference. Once MySQL server is installed, you will notice MySQL option on system preference. The following screenshot depicts the MySQL options on Mac system preference window.

Now click on **MySQL | Start MySQL Server** to start the server demon.



Installing Tomcat Application Server

Now that we have got the Java and database installed on our computer, now we need an application server to deploy the web service. We prefer to use Tomcat for this purpose.

Download the latest tomcat bundle form official Tomcat site and unzip it on your computer.

<https://tomcat.apache.org/download-70.cgi>

Configuring Database

After the MySQL server instance is started, we can setup the database schema. Let us use the following SQL command to create “Points_of_intrest_db” database.

```
CREATE DATABASE Points_of_intrest_db
```

Type the following command on your terminal.

```
$ mysql -u root -p -e "CREATE DATABASE Points_of_intrest_db";
```

The source code bundle is provided with the **Points_of_intrest_db_poi_tb.sql** file. This is a backup of the whole database with some test data. Use the following command to import the database

```
$ mysql -u root -p Points_of_intrest_db <
Points_of_intrest_db_poi_tb.sql
```

The above command will create the “poi_tb” table with following columns.

Field	Type	Null	Key	Extra
Id	int (11)	No	Primary key	Auto increment
Name	varchar(400)	No		
Description	varchar(5000)	Yes		
Image	varchar(100)	Yes		

Latitude	decimal(10,6)	Yes		
Longitude	decimal(10,6)	Yes		
Address	varchar(500)	Yes		

You can use MySQL command line as explained above to setup the database or alternatively you can use the tools such as MySQL workbench.

Download and install eclipse for J2EE

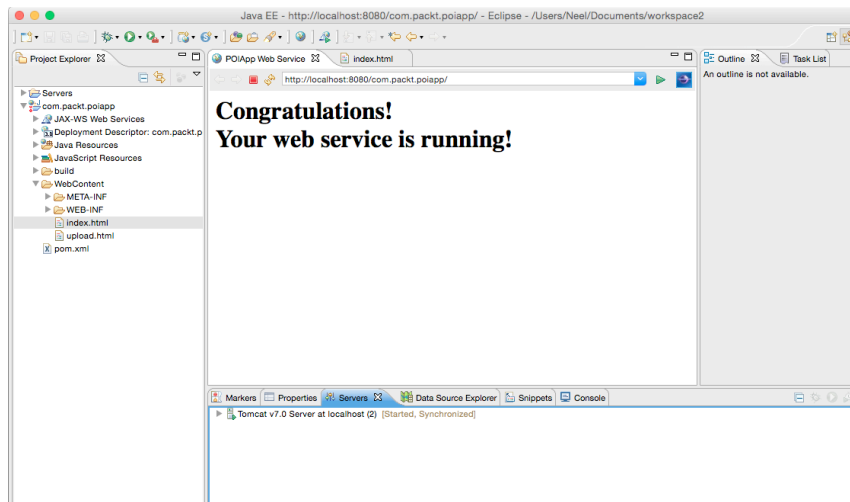
Eclipse IDE is used for creating the POI web service. Download a copy of latest eclipse for your system from official website.

<http://www.eclipse.org/downloads/packages/eclipse-ide-java-ee-developers/indigosr2>

Deploying Web Service

Now that we have everything ready, we can proceed to import the web service source code and deploy the web service on local machine. The process is very straightforward in Eclipse using, Import project wizard.

1. Open Eclipse
2. Select **File | Import**. This will open the import project wizard.
3. Select **General | Existing Project into Workspace** and click **Next**.
4. Browse the Root directory to "Code_Bundle/POIWebService/com.packt.poiapp", select the **com.packt.poiapp** project and click **Finish**. Notice that project will be imported into eclipse workspace.
5. Right click on the project from eclipse project explorer, and select **Run as | Run on Server**. This will open a new dialog for selecting the server options.
6. Expand **Apache** from server type and select the appropriate Tomcat server version. This should be same as the Tomcat version you have downloaded. Provide the path to Tomcat installation directory and click **Finish**.
7. Notice that it will start the Tomcat application server and deploy the web service code. Once deployment is successful you will notice the following message.



8. Now let us update user id and password to access the database. Open **PoiService.java** file and update your own database user name and password.

```
// Your database user id, default is root
private static final String DB_USER = "root";

// Your database password
private static final String DB_PASSWORD = "admin";
```

9. Now you can verify if the web services are running by hitting the following URL on your browser.

<http://localhost:8080/com.packt.poiapp/api/poi/pois/>

This will return the following results on your browser window.

```
{
  "pois": [
    {
      "address": "Central London, UK",
      "description": "Her Majesty's Royal Palace and Fortress, known as the Tower of London, is a historic castle located on the north bank of the River Thames in central London. It lies within the London Borough of Tower Hamlets, separated from the eastern edge of the square mile of the City of London by the open space known as Tower Hill. It was founded towards the end of 1066 as part"
    }
  ]
}
```

```
of the Norman Conquest of  
England.", "id": "2", "image": "http://192.168.1.108:8080/com.pac  
kt.poiapp/api/poi/poiimage2.jpg", "latitude": "51.302", "longitu  
de": "0.1197", "name": "Tower of London"},  
{ .... }, ...]]
```

Congratulations! The web service is now running on your local machine.