Installing and Getting TPC-W to run on Virtuoso-12

Oct 8 2004
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This serves as a future reference to all the steps we took to get the TPC-W benchmark running.
Useful links:

1. Download the TPC-W Java Distribution from http://mitglied.lycos.de/jankiefer/
2. Installation Phase
    You need to following software:
    1. Tomcat (JAVA Servlet server) from http://jakarta.apache.org/site/binindex.cgi

    Install this to **/usr/local/tomcat**
    After installing this file, replace the server.xml in TOMCAT_HOME/conf/ with server.xml from the site

    The default server.xml has some problems described on the site. You can change the connecting port form 80 to 8080, since Apache may be running on port 80.

    2. Apache Ant to compile the JAVA code http://ant.apache.org/
    Add the Apache directory to the Path.

    3. JAVA SDK http://java.sun.com/
    Install this to **/usr/loca/jdk/**

    4. You need the MySQL Database. Start the mysqld daemon (scripts in /etc/init.d) or use /sbin/chkconfig.

    5. You need the JDBC Mysql driver. Download it from
    http://dev.mysql.com/downloads/connector/j/3.0.html

    Unzip the file and copy the file **mysql-connector-java-3.0.15-ga-bin.jar** to
    /usr/local/tomcat/webapps/tpcw/WEB-INF/lib

    6. Download the file servlet.jar from http://cvs.apache.org/builds/jakarta-servletapi-4/nightly/
    This file is needed to compile the servlets in TPCW. Copy this file to
    /usr/local/jakarta-tomcat-5.0.28/server/lib/servlet.jar

    You don't need Apache to run the TPCW benchmarks as Tomcat includes a web server.

3. Configuration Phase
    1. Set the CLASSPATH to servlet.jar above, also the current path and /usr/local/jdk
    2. Change the main.properties and tpcw.properties file in home directory of TPCW. Here are samples we used.

    main.properties
    Note the path of servlet.jar and the MySQL JDBC driver.
    Also note the database name we use for MySQL (std)

```
###############################################################################
# main.properties for build.xml.
# Copyright 2003 by Jan Kiefer.
#
# This file is distributed "as is". It comes with no warranty and the
# author takes no responsibility for the consequences of its use.
#
# Usage, distribution and modification is allowed to everyone, as long
# as reference to the author(s) is given and this license note is included.
###############################################################################

#<!-- Path to servlet.jar, change this ... -->
cpServ=/usr/local/jakarta-tomcat-5.0.28/server/lib/servlet.jar

#<!-- Path to the JDBC driver for your DBMS, change this ... -->
#cpJDBC=/usr/share/java/mkjdbc.jar
cpJDBC=/usr/local/tomcat/webapps/tpcw/WEB-INF/lib/mysql-connector-java-3.0.15-ga-bin.jar

#<!-- Directory where tpcw.war will be put with task 'inst' -->
webappDir=/usr/local/tomcat/webapps/tpcw

#<!-- Path to the Perl interpreter. -->
perlPath=/usr/bin/perl

#<!-- Directory where the Images will be put with task genimg. -->
imagesDir=${webappDir}/Images

#<!-- Filter file for SQL queries, change this if needed -->
sqlFilter=sql-mysql.properties

dbName=tpcw
#dbName=mckoi
```

tpcw.properties
Here we also specify the username and the password for the database in the jdbc db URL.

```
###############################################################################
# tpcw.properties for build.xml.
# Copyright 2003 by Jan Kiefer.
#
# This file is distributed "as is". It comes with no warranty and the
# author takes no responsibility for the consequences of its use.
#
# Usage, distribution and modification is allowed to everyone, as long
# as reference to the author(s) is given and this license note is included.
###############################################################################

# set the JDBC parameters
jdbc.driver=com.mysql.jdbc.Driver
#jdbc.driver=com.mckoi.JDBCDriver
jdbc.path=jdbc:mysql://localhost/tpcw?user=tpcw&password=tpcw
jdbc.connPoolMax=100
```

```
sql.bigCharType=tinyblob
#sql.bigCharType=tinyblob

# set the values you want for tpcw
num.item=1000
num.eb=10

# use the right session string for your servlet container
#sessionIdString=$sessionid$
sessionIdString=jsessionid=

standardUrl=http://localhost:8080/
#servletUrlPath=/servlet
servletUrlPath=/
tpcwUrlPath=/tpcw
```

3. After this, we need to create a database std in MySQL and grant the user tpcw privileges to the database.
To create database:
create database std;

To add user tpcw to the database std:
GRANT ALL PRIVILEGES ON std.* TO tpcw@'%' IDENTIFIED BY "tpcw" WITH GRANT OPTION;

The % sign indicates tpcw can come from any host.

You can check the permissions from the mysql database and the db table.

4. Build phase

1. Execute **ant dist** to conpile the servlets and the rbe java files. **ant inst** will place the files in the tomcat tpcw directory. We also unzipped the war file by unzip warfilename. It extracts all the classes form the war file.
2. Populate the database: **ant gendb**
3. Generate the Image: **ant genimg**

5. After this add the webapp context to server.xml by following the instructions given in Installation page.

```
<Context path="/tpcw" docBase="/tpcw/tpcw.war" debug="0"
        reloadable="false" crossContext="true"
        privileged="false">
   <Logger className="org.apache.catalina.logger.FileLogger"
           prefix="localhost_tpcw_log." suffix=".txt" verbosity="0"
           timestamp="true"/>
</Context>
```

After this the TPCW benchmark should be ready to run. You can test the TPCW homepage by testing and typing in the browser:
http://localhost:8080/tpcw/TPCW_home_interaction.

Running the TPCW benchmark

The running instructions are described on the webpage.

Inferring the Results

The main metric is WIPS : Web interactions per second.
The avg. user think time is 7 seconds. : So start a large number of RBEs to get a large load on the system.