

Seminar 10 - PerfCake With Databases

PV260 Software Quality

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Database Setup

PostgreSQL

1. Download PostgreSQL binaries
<http://www.enterprisedb.com/products-services-training/pgbindownload>
2. Download startup bat file (from study materials) and copy it to the postgres root folder
3. If you are running it for the first time, uncomment the line with the initdb command (delete the REM keyword)
4. Run the bat file and register the database in Netbeans

NOTE: Always use file paths without whitespaces and download the files to the local drive.



Database Setup

MySQL

1. Download and unzip the latest Uniform Server from:
<http://www.uniformserver.com/>
2. Run UniController.exe and start MySQL server
3. Optionally, create new database (e.g. library)
4. Register the database in Netbeans

Derby

1. Start JavaDB server and create a new database
2. Register new Java DB (Network) connection in Netbeans

NOTE: If possible use the same user names as is the name of your database schema (e.g. user name in Java DB should be APP etc.)



Data Import

1. In Netbeans, right-click on the selected connection and Execute command option
2. Copy-paste contents of the tables-create.txt file in the study materials and execute the command
3. Create another command and copy the contents from the data-inserts.txt¹

¹The data were generated with the DataFiller script:



Vertx Server Application

- ▶ Simple http server which uses the Hibernate to return the results of a database query with random parameters.
- ▶ Runs at the localhost:8080

Usage

1. Download the **Vertx-Library** project from the study materials
2. Comment/Uncomment sections in the `persistence.xml` to match your currently used database
3. Adjust the `url`, `schema`, `user`, `password` properties according to your database connection settings.
4. Run the server



Task 1

- ▶ Select two of the suggested databases
- ▶ Compare the performance (response time, throughput) of the vertex-library server for the chosen databases using the PerfCake scenarios
 - ▶ the runtime should be 4-5 minutes
 - ▶ use the HttpSender
 - ▶ use the PerfCake's ChartDestination (Result,Average attributes) to visualize results
- ▶ For a bonus points include also the MemoryUsageReporter

Task 2

- ▶ Compare the performance of at least two databases (without using the Vertx-library server)
- ▶ Use the JdbcSender (see the PerfCake documentation for a config)
- ▶ You need to copy the jar files with the database drivers (e.g. from the local maven repository) to the PerfCakes's `/lib/ext` folder:
 - ▶ `derbyclient-xxx.jar`
 - ▶ `mysql-connector-java-xxx.jar`
 - ▶ `postgresql-xxx.jdbc4.jar`
- ▶ Write and use a custom message file with the native sql query.
 - ▶ you can find the translated hql query from the vertx-library in the server log or you can write your custom (reasonably complicated) query