

Factorbase Running instruction

Factorbase on Cedar

General instruction:

Lab: <https://csil-git1.cs.surrey.sfu.ca/oschulte/group-sharing/-/wikis/Clusters>

Official: https://docs.alliancecan.ca/wiki/Database_servers

Directory of project: /home/functor/project/huawei_project

- **Connect to the cedar cluster**

Access: ssh functor@cedar.computecanada.ca

Password: tEMJod28FEvePA

- **Load module**

For factorbase, it would be Java and MariaDB. Cedar provides ways to build our own environment by loading modules.

module load java/11.0.2

module load mariadb/10.4.13

- **Transfer file between local and cluster**

By globus:

Availability: Compute RAC2017 allocations started June 30, 2017
Login node: cedar.computecanada.ca
Globus endpoint: computecanada#cedar-dtn
System Status Page: http://status.computecanada.ca/

Instructions: <https://docs.alliancecan.ca/wiki/Globus>

- **Run [Factorbase](#)**

Input: A relational schema hosted on a MySQL server.

Output: A Bayesian network that shows probabilistic dependencies between the relationships and attributes represented in the database. Both network structure and parameters are computed by the system.

The Factorbase can be executed as a JAR file, which is generated during the installation process from the source code, with below command

```
java -Dconfig=config.cfg -jar factorbase-1.0-SNAPSHOT.jar
```

'factorbase-1.0-SNAPSHOT.jar': jar file of factorbase

'config.cfg': config file, includes database info and other settings

Example config file:

```
dbaddress = mysql://cedar-mysql-vm
dbname = functor_carla_271
dbusername = functor
dbpassword = +!lql+OTfYG89g%U
dbtemporarytablesiz = 10
```

- Run job on cedar

Instruction: https://docs.alliancecan.ca/wiki/Running_jobs

Example sh file:

```
#!/bin/bash
#SBATCH --gres=gpu:1          # number of gpus per node
#SBATCH --mem=16GB           # memory per node
#SBATCH --time=0-10:10       # time (DD-HH:MM)
#SBATCH --account=def-functor # account
#SBATCH --output=log_%a.out   # %A for main jobID, %a for array id.
java -Dconfig=./config.cfg -jar ../jar/factorbase-1.0-SNAPSHOT.jar
```

Others:

Name restriction

There is a restriction on the name of the database in Cedar. Basically, the name of the database will typically be "<username>_db" where <username> is your Alliance username.

Eg: Database names need to start with "functor_" like functor_unilwin_BN, functor_movie_lens

Information of the database server

The username, password, database server name, and other information required to make a MySQL connection will be stored in a file called my.cnf located in your home directory.

```
"host=cedar-mysql-vm
user=functor
protocol=TCP
password=+!lql+OTfYG89g%U"
```

Factorbase on the Apple OS

Install MariaDB

- The version of MariaDB that should work is mariadb:10.4.17 as that is the same one used in the GitHub Actions build.
- Through brew to install the right version: "brew install [mariadb@10.4](#)"
- Use brew start to start the database server:
 - "brew services start mariadb@10.4"
 - "brew services restart mariadb@10.4"

Install Maven

- go through this web tutorial:
<https://www.digitalocean.com/community/tutorials/install-maven-mac-os>

FactorBase Instruction:

- Clone the repository from <https://github.com/sfu-cl-lab/FactorBase>
- Follow the instructions on the GitHub to install
- During running, only the jar file is needed

Useful command:

To run factorbase:

```
"java -Dconfig=path_to_the_.cfg -jar factorbase/target/factorbase-1.0-SNAPSHOT.jar"
```