

Introduction to Graph Databases

Access to Resources

All databases are provided in the Moodle site for the course.

Additionally

Download the latest Neo4j **Community Server** from

<https://neo4j.com/download-center/#community>

The provided dumps are checked for versions up to 5.10. They should work without problems for the newer versions.

The databases are available at:

<https://drive.google.com/drive/u/0/folders/1HEClwt2H-Okyyi8AN5Epf2ure0nGbaB>

Neo4j Setup

- 1) Download Neo4j COMMUNITY from <https://neo4j.com/download-center/#releases>
- 2) Unzip the content in any folder. **You must have Java 17 installed for versions 5.X**
- 3) To load the databases provided, go to the ...**bin** folder and run. For example, to load webdb.db.dump, write:

```
neo4j-admin database load --verbose --overwrite-destination=true --from-path="your-path/" webdb.db. (do not include the extension "dump")
```

Note that dumps from databases created with versions older than 5.X are not compatible with version 5.X

- 4) Go to folder

neo4j-community-xxx**conf** and add one line for each database you created:

.....

```
# The name of the default database
# dbms.default_database = neo4j
# dbms.default_database = northwindhg
dbms.default_database = minigraphweb
# .....
```

You must unmark the database you want to work with, in this case it will be minigraphweb.

If you want to login without password unmark

```
dbms.security.auth_enabled = false
```

Unmark:

```
# Enable this to be able to upgrade a store from an older version.
```

```
dbms.allow_upgrade = true
```

```
# `LOAD CSV` section of the manual for details.
```

```
dbms.directories.import = import
```

5) Go to the **lab** folder of the installation, pick the apoc-5.x.x-core jar file, and copy it into the **plugins** folder.

6) You will need other libraries. Go to the folders that you can find in the neo4j.com documentation site, download and copy the following jar files:

apoc-5.x.x-extended (more functions that extend the APOC library) (ALWAYS check the correct version, otherwise neo4j will not start).

neo4j-graph-data-science-2.4.3 (data science algorithms)

osm-0.2.3-neo4j-4.1.6-procedures (to work with Open Street Map)

postgresql-42.6.0 (jdbc driver for PostgreSQL)

neosemantics-5.7.0.0.jar (to interact with SPARQL)

In the neo4.conf file write:

```
dbms.security.procedures.unrestricted=apoc.*,gds.*,n10s.*
```

```
dbms.security.procedures.allowlist=apoc.coll.*,apoc.load.*,gds.*,apoc.algo.*,apoc.meta.*,apoc.*.*,n10s.*
```

Create an **apoc.conf** file and write in it: `apoc.export.file.enabled=true`

7) Open a terminal, go to neo4j-community-5.10\bin (this depends on the version you downloaded) and type "neo4j console" (on linux/Mac: ./neo4j console)

8) Open a browser and type the URL <http://localhost:7474>. You will get the graphic interface, and the active database will be minigraphweb.

9) To work with con webdb.db, close the server (ctrl-c in the command line), open the neo4j.conf file and do:

...

```
dbms.default_database= webdb.db
```

```
#dbms.default_database=minigraphweb
```

...

Repeat step 5).

RDF and SPARQL Setup

Download and install the Virtuoso DBMS from <https://vos.openlinksw.com/owiki/wiki/VOS>

When you start your database, you open the Virtuoso Conductor with urs/pwd: dba/dba on <http://localhost:8890/>