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Big Data: Data Analysis Boot Camp Starting Neo4j

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19 January 2018

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- 8 Danger!!



What are we going to cover?

- 1 Bits and pieces of the Neo4j ecosystem
- 2 How to start Neo4j in Windows and *unix environments





50,000 view

At a macro level:

- 1 The client application (your code) uses HTTP to talk to a web server.
- 2 The web server runs in a Java Virtual Machine (JVM).
- 3 Neo4j databases live as part of a directory structure.

Server must be running for Neo4j to work.

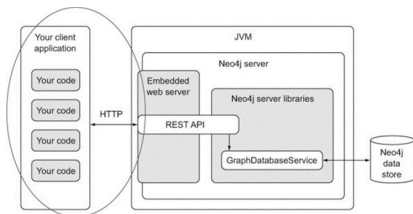
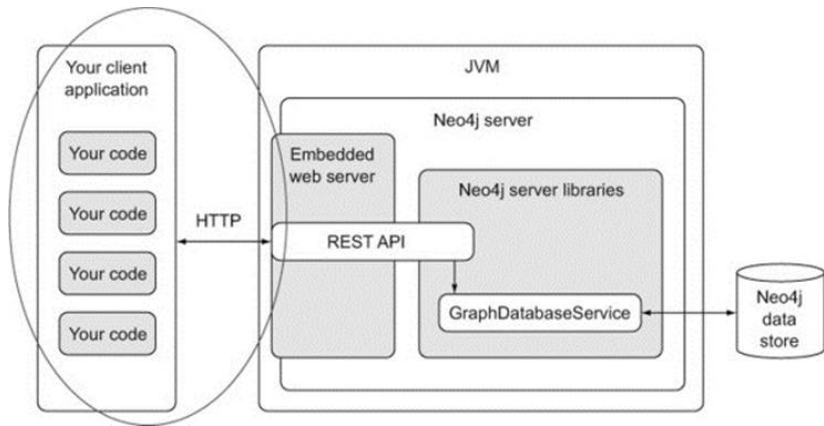
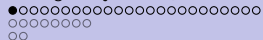


Image from [1].



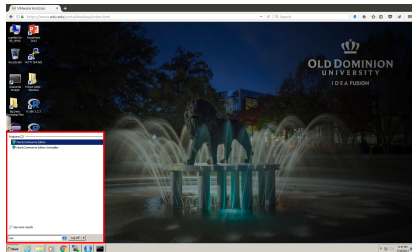
Same image.



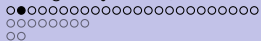


Locate the neo4j server program.

- 1 Press the start menu button.
- 2 Type neo
- 3 Highlight and click the Neo4j Community Edition

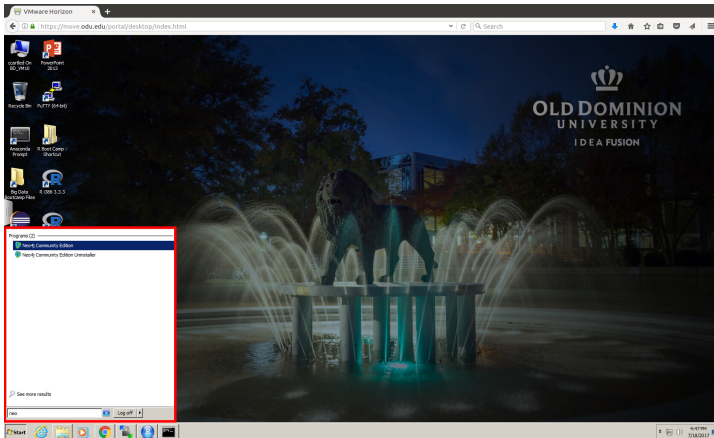


See the red outlined area.

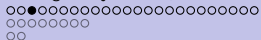


Windows

Same image.

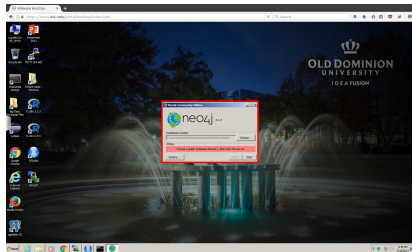


See the red outlined area.

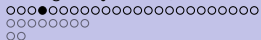


See the control panel.

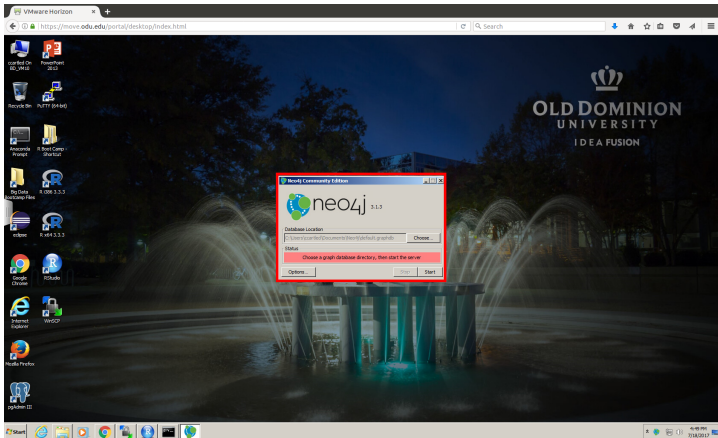
The Neo4j Community Edition control panel.



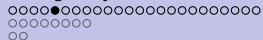
See the red outlined area.



Same image.

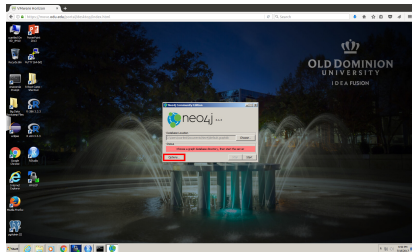


See the red outlined area.

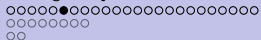


Choose to edit neo4j options.

Press the Options... button.

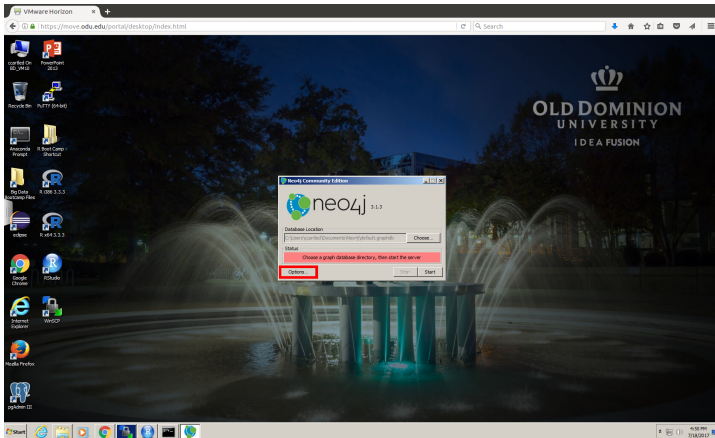


See the red outlined area.

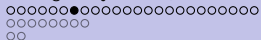


Windows

Same image.

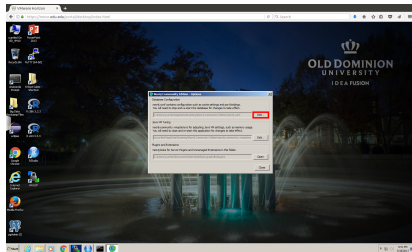


See the red outlined area.

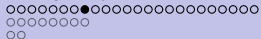


Edit the database configuration.

Press the Edit... button.

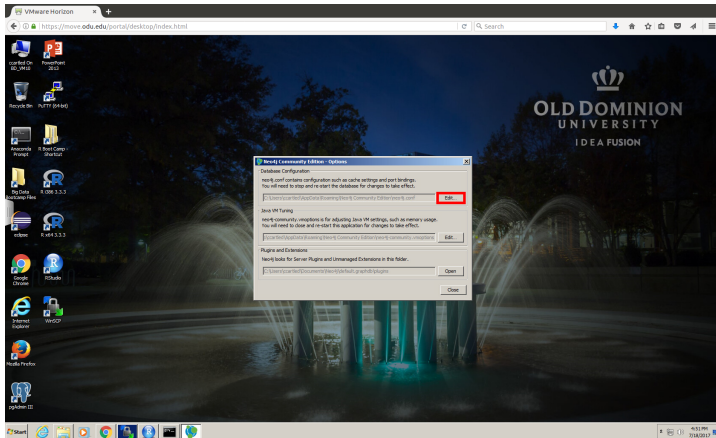


See the red outlined area.



Windows

Same image.



See the red outlined area.

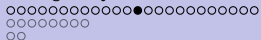

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Windows

Same image.

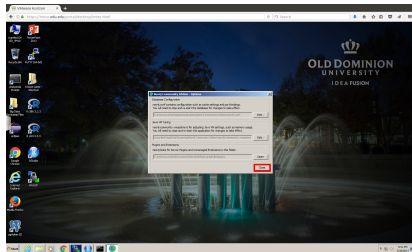
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File Edit Format View Help
-----
# Server configuration
#
# For more details and a complete list of settings, please see
# #{settings-reference.url}
#
# This setting constrains all 'LOAD CSV' import files to be under the 'import' directory. Remove or uncomment it to
# allow files to be loaded from anywhere in filesystem; this introduces possible security problems. See the 'LOAD CSV'
# section of the Neo4j Manual for more details.
# dbms.directories.import=import
#
# Require (or disable the requirement of) auth to access Neo4j
dbms.security.auth_enabled=true
#
# with default configuration Neo4j only accepts local connections.
# To accept non-local connections, uncomment this line:
#dbms.connectors.default_listen_address=0.0.0.0
#
# You can also choose a specific network interface, and configure a non-default
# port for each connector, by setting their individual listen_address.
#
# The address at which this server can be reached by its clients. This may be the server's IP address or DNS name, or
# it may be the address of a reverse proxy which sits in front of the server. This setting may be overridden for
# individual connectors below.
#dbms.connectors.default_advertised_address=localhost
#
# You can also choose a specific advertised hostname or IP address, and
# configure an advertised port for each connector, by setting their
# individual advertised_address.
#
# Bolt connector
dbms.connector.bolt.enabled=true
#dbms.connector.bolt.tls_level=OPTIONAL
#dbms.connector.bolt.listen_address=:7687
```

See the red outlined area.

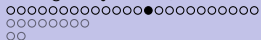


Close the control panel.

Press the Close button.

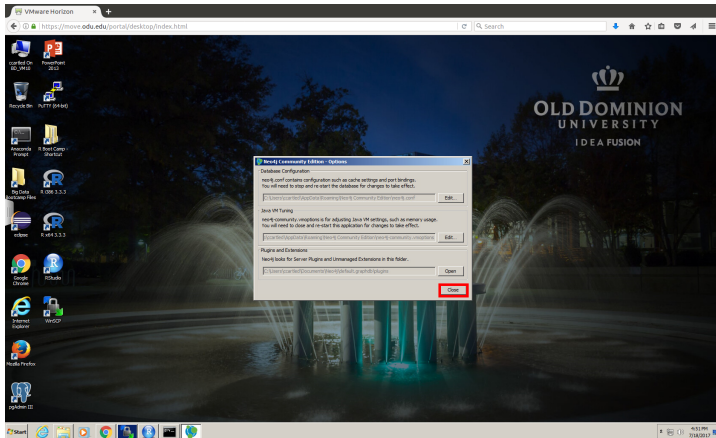


See the red outlined area.

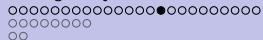


Windows

Same image.

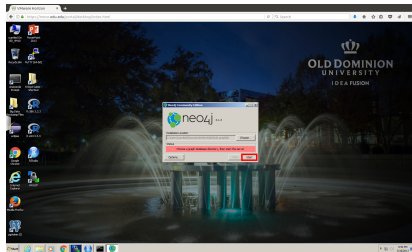


See the red outlined area.

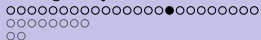


Start the neo4j server.

Press the Start button.

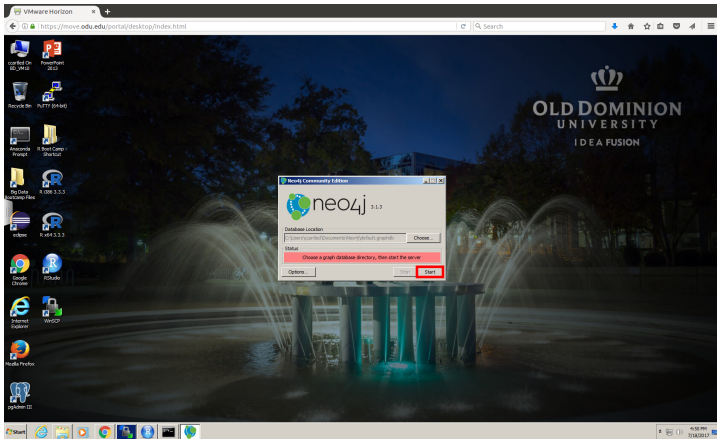


See the red outlined area.



Windows

Same image.

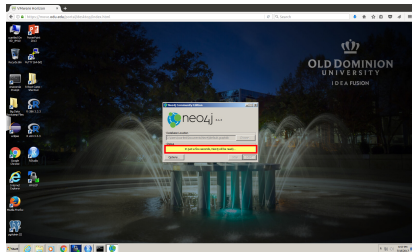


See the red outlined area.

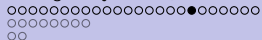
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Wait for the server to start.

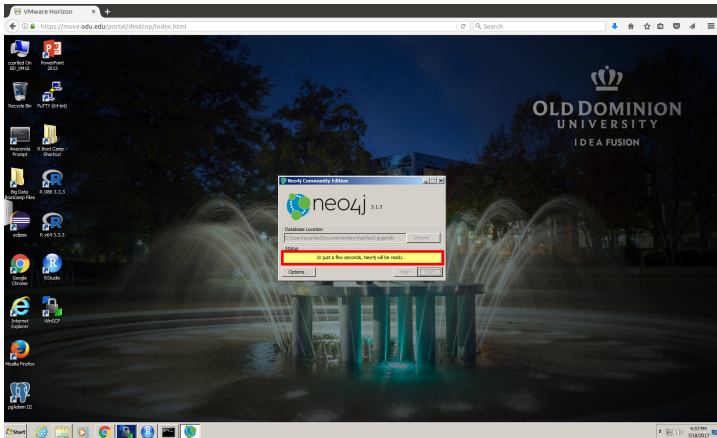
Be patient.



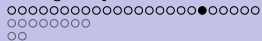
See the red outlined area.



Same image.

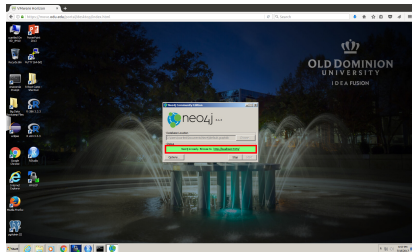


See the red outlined area.

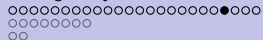


The server is ready.

Look at the green line.

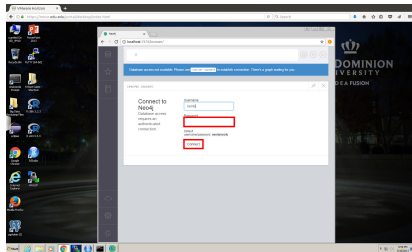


See the red outlined area.

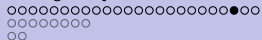


Bring up your favorite browser

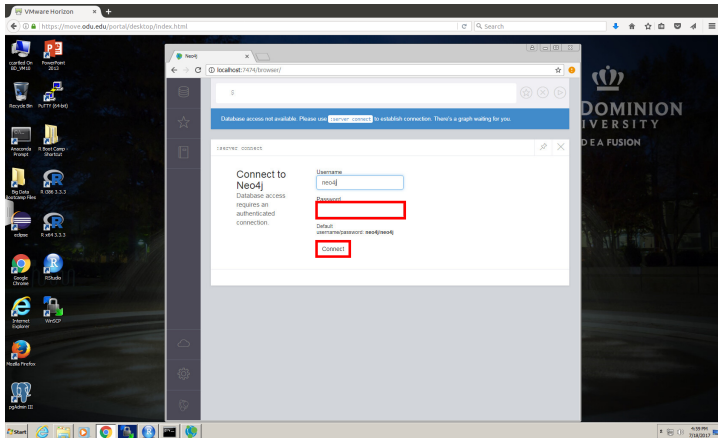
In the browser address bar, enter:
`http://localhost:7474`
and press Return. This will bring up a database interface.
Login using `neo4j` for the
username and password.



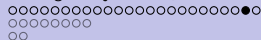
See the red outlined area.



Same image.

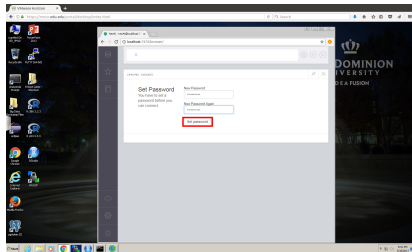


See the red outlined area.

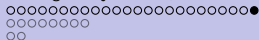


Change the default password

Set the new password as:
ODUBootcamp
Press the “Set password” button.
The database is ready for use.

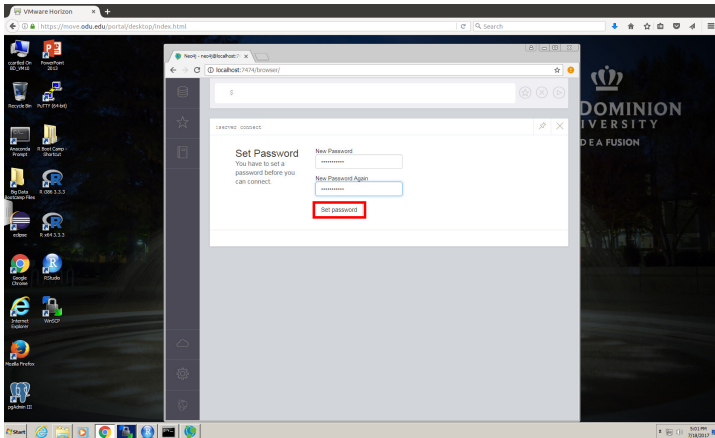


See the red outlined area.



Windows

Same image.



See the red outlined area.



*unix

Same image.

```
Terminal File Edit View Search Terminal Tabs Help
chuck@office-computer: ~/Teaching/DataAnalysis/2017/Scripts
chuck@office-computer: ~/Teaching/DataAnalysis/2017/Presentations
chuck@office-computer:~/Teaching/DataAnalysis/2017/Presentations$ sudo su neo4j
[sudo] password for chuck:
neo4j@office-computer:/home/chuck/Teaching/DataAnalysis/2017/Presentations: /usr/share/neo4j/bin/neo4j console
Active database: graph.db
Directories in use:
  home: /usr/share/neo4j
  config: /usr/share/neo4j/conf
  logs: /usr/share/neo4j/logs
  plugins: /usr/share/neo4j/plugins
  import: NOT SET
  data: /usr/share/neo4j/data
  certificates: /usr/share/neo4j/certificates
  run: /usr/share/neo4j/run
Starting Neo4j.
WARNING: Max 1024 open files allowed, minimum of 40960 recommended. See the Neo4j manual.
2017-07-14 17:14:22.875+0000 WARN Config file [/usr/share/neo4j/conf/neo4j.conf] does not exist.
2017-07-14 17:14:22.116+0000 INFO ===== Neo4j 3.2.2 =====
2017-07-14 17:14:22.174+0000 INFO Starting...
2017-07-14 17:14:23.762+0000 INFO Bolt enabled on 127.0.0.1:7687.
2017-07-14 17:14:29.993+0000 INFO Started.
2017-07-14 17:14:31.506+0000 INFO Remote interface available at http://localhost:7474/
```

See the red outlined area.



*unix

Same image.

```
Terminal File Edit View Search Terminal Tabs Help
chuck@office-computer: ~/Teaching/DataAnalysis/2017/Scripts
chuck@office-computer: ~/Teaching/DataAnalysis/2017/Presentations

chuck@office-computer:~/Teaching/DataAnalysis/2017/Presentations$ sudo su neo4j
[sudo] password for chuck:
neo4j@office-computer:~/Teaching/DataAnalysis/2017/Presentations$ /usr/share/neo4j/bin/neo4j console
Active database: graph.db
Directories in use:
  home: /usr/share/neo4j
  config: /usr/share/neo4j/conf
  logs: /usr/share/neo4j/logs
  plugins: /usr/share/neo4j/plugins
  import: NOT SET
  data: /usr/share/neo4j/data
  certificates: /usr/share/neo4j/certificates
  run: /usr/share/neo4j/run
Starting Neo4j.
WARNING: Max 1024 open files allowed, minimum of 40960 recommended. See the Neo4j manual.
2017-07-14 17:14:22.875+0000 WARN Config file [/usr/share/neo4j/conf/neo4j.conf] does not exist.
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```

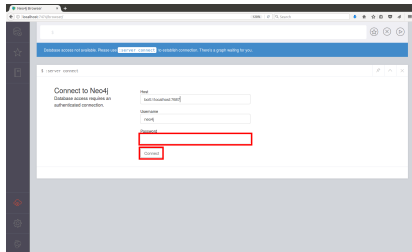
See the red outlined area.



*unix

Bring up your favorite browser

In the browser address bar, enter:
`http://localhost:7474`
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username and password.

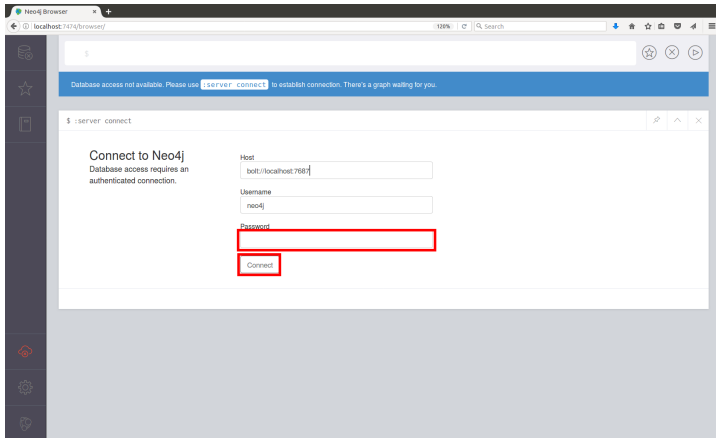


See the red outlined area.



*unix

Same image.



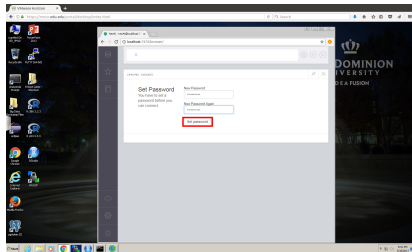
See the red outlined area.



*unix

Change the default password

Set the new password as:
ODUBootcamp
Press the “Set password” button.
The database is ready for use.
(Windows image, functionality is
identical)

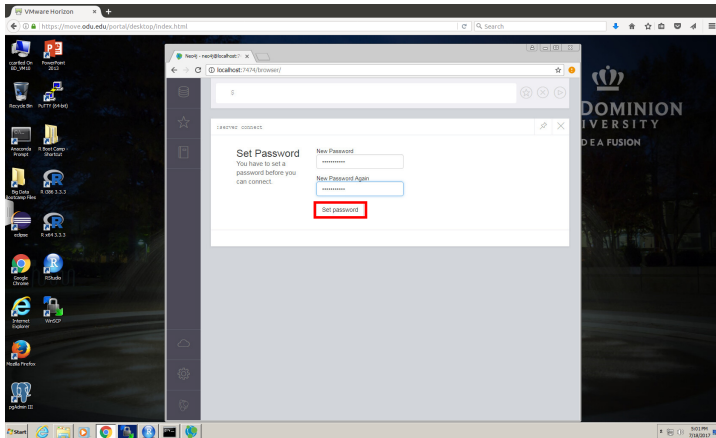


See the red outlined area.



*unix

Same image.



See the red outlined area.



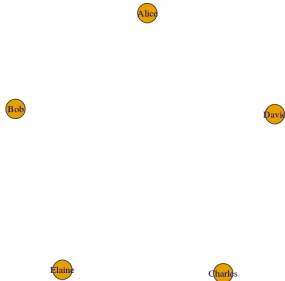
Check R connectivity

Use the attached R script to verify everything is correct.

R Graphics: Device 2 (ACTIVE)

The attached R script:

- 1 Logs into the neo4j database
- 2 Adds some nodes and arcs
- 3 Performs some actions on the database
- 4 Creates an image.

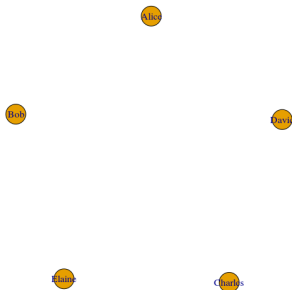


If you see this image, then things are configured correctly.



Check R connectivity

Same image.



If you see this image, then things are configured correctly.



Q & A time.

“The Answer to the Great Question . . . Of Life, the Universe and Everything . . . is . . . forty-two,’ said Deep Thought, with infinite majesty and calm.”

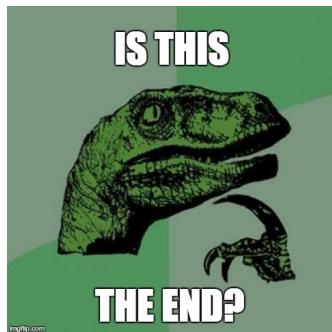
Douglas Adams, The Hitchhiker’s Guide to the Galaxy





What have we covered?

- Talked about how to start Neo4j in Windows and *unix environments
- Hinted there are about a gazillion other ways to start Neo4j



Next: Working with neo4j.



References (1 of 1)

- [1] Apprize Staff, [Neo4j in Action \(2015\)](http://apprize.info/javascript/neo4j/12.html),
<http://apprize.info/javascript/neo4j/12.html>, 2015.



Files of interest

- 1 Checkout the Neo4j R

connectivity



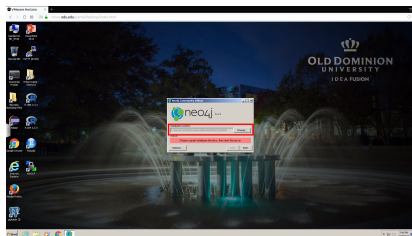


To delete all Windows neo4j databases

If you find you need to delete ALL the neo4j databases, then

- 1 Find this directory, and
- 2 Remove the graph.db file.

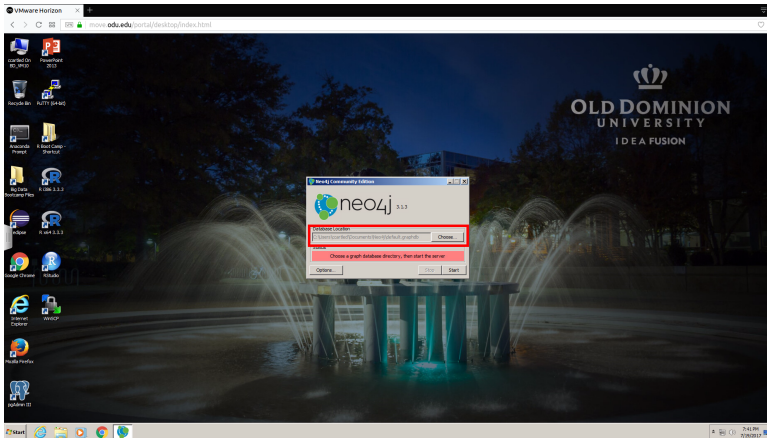
This is DANGEROUS. All databases, users, etc., will be lost.



See the red outlined area.



Same image.



See the red outlined area.

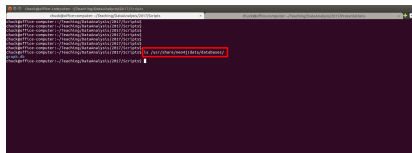


To delete all *unix neo4j databases

If you find you need to delete ALL the neo4j databases, then

- 1 Find this directory, and
- 2 Remove the graph.db file.

This is DANGEROUS. All databases, users, etc., will be lost.



See the red outlined area.

