

Build the road network  
8/29~9/4 by Chris

**Prerequisite:** correctly SUMO installation.

**Tools:**

\*note\* Need java 8 for Java Openstreetmap to open the 'jar' file  
Commands to install the java-1.8 on Ubuntu 14.04 LTS

```
sudo add-apt-repository ppa:webupd8team/java -y
sudo apt-get update
sudo apt-get install oracle-java8-installer
sudo apt-get install oracle-java8-set-default
java -version
```

## 1. Tool-generated map

**NETGENERATE:** <http://sumo.dlr.de/wiki/NETGENERATE>

- If the SUMO is successfully installed, in a terminal type netconvert, there will be some information about this tool.

- 

```
chris@chris-ubuntu:~/Downloads/josm$ netgenerate
SUMO netgenerate Version 0.21.0
Copyright (C) 2001-2014 DLR and contributors; http://sumo-sim.org
License GPLv3+: GNU GPL Version 3 or later <http://gnu.org/licenses/gpl.html>
Use --help to get the list of options.
```

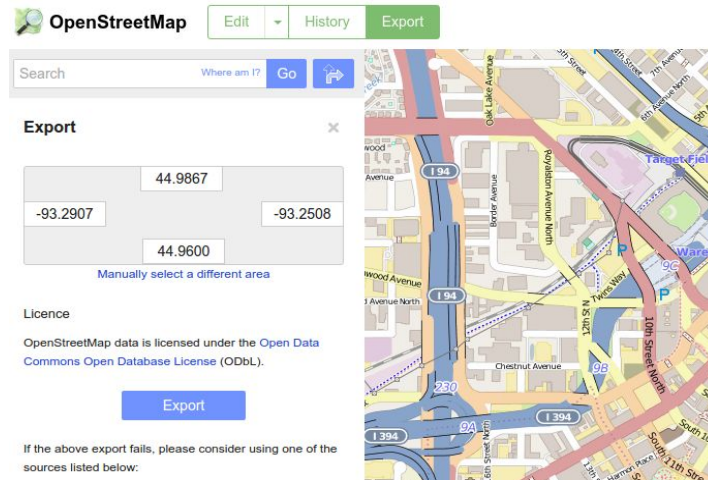
- Usage
  - refer to: netgenerate --help
  - example:

```
netgenerate -g --grid.x-number 5 --grid.y-number 7 --tls.guess -L 3 -S 20
```

```
netgenerate -c <CONFIGURATION>
  create net from given configuration
netgenerate --grid [grid-network options] -o <OUTPUTFILE>
  create grid net
netgenerate --spider [spider-network options] -o <OUTPUTFILE>
  create spider net
netgenerate --rand [random-network options] -o <OUTPUTFILE>
  create random net
```

## 2. Real-world map

a. **OpenStreetMap:** <https://www.openstreetmap.org/>

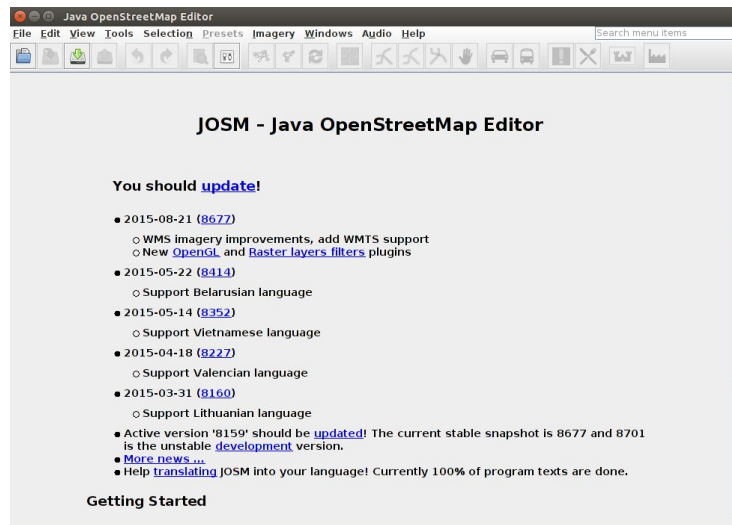


<https://www.openstreetmap.org/>

- In the top of the page: Export
- Left side: Manually select a different area
- Adjust the area then Export, the file is **map.osm** to save

b. **Java OpenStreetMap Editor(JOSM):** <https://josm.openstreetmap.de/>

- Download josm-tested.jar on the web page.
- Click how to run, or type `java -jar josm-tested.jar` after going to position of josm-tested.jar in a terminal



- File->Open->\*.osm, then the downloaded file is opened
- Pruning, modifying, simplifying etc. on map can be done here (mostly it's to delete a bad road segment), then save.

c. **NETCONVERT:** <http://sumo.dlr.de/wiki/NETCONVERT>

- If the SUMO is correctly installed, in a terminal type netconvert, there will be some information about this tool.

```
chris@chris-ubuntu:~/Downloads/josm$ netconvert
netconvert: /home/chris/usr/lib/libgdal.so.1: no version information available
required by netconvert)
SUMO netconvert Version 0.21.0
Copyright (C) 2001-2014 DLR and contributors; http://sumo-sim.org
License GPLv3+: GNU GPL Version 3 or later <http://gnu.org/licenses/gpl.html>
Use --help to get the list of options.
```

- Usage
  - refer to: netconvert --help
  - example:

```
netconvert --osm-files ./*.osm --remove-edges.by-vclass
hov,taxi,bus,delivery,truck,tram,rail_urban,rail,rail_electric,motorcycle,bicycle,pedestrian -o
*.net.xml
```

```
netconvert -s *.net.xml --tls.guess
```

### TASKS:

1. Generate 7\*8 grid map with 3 lanes in road
2. Select New York, Manhattan area, make a 1km\*1km real map.