Wireless Networks - Spring 2019
Assignment #1

This assignment includes basic lessons of installation, compilation and some examples of running the ns-3 scripts. Since ns-3 is an open-source simulator, there is a forum for discussion and asking questions when you face difficulty. However, before posting any query you should search for the required information from previously asked questions in the forum. To actively participate in the forum, join the group: https://groups.google.com/forum/#!forum/ns-3-users. Those who are interested in learning ns-3 in depth, should refer to the official tutorial in detail : https://www.nsnam.org/docs/release/3.29/manual/html/index.html. In general, for quick start follow the instructions in the assignment.

System requirement: The ns-3 is more friendly with linux OS. If you don't have linux, you can use virtual machines (VM).

Instructions:

1 - Download the ns-3 code for the latest release : https://www.nsnam.org/releases/ns-3-29/.

2 - Build ns-3 code using "waf". Build is required for first time only and other time only if you change codes in the protocol stack modules inside the "src" folder.

For building go to the folder ns-3.29/ and run the following commands:

a) ./waf configure

If configure gives error for some dependencies, install them. If configure is successful run:

b) ./waf

3 - Next is running ns-3 scripts for specific experiments. You can get some default examples in the folder "ns-3.29/examples/" folder. We will walk through some of the examples in "ns-3.29/examples/"tutorial/" folder. However, ns-3 allows to run an experiment script from the "ns-3.27/scratch" folder only. So you need to copy the examples (.cc files from the tutorial folder) to the "ns-3.27/scratch" folder. For example:

cp /home/xyz/ns-3.29/examples/tutorial/third.cc /home/xyz/ns-3.29/scratch/mythird.cc

4 - To run the script (for example mythird.cc in the scratch folder) run the command from the ns-3.29/ folder :

./waf –run mythird

Note that, while running remove the .cc of the file name.

Assignment:

1 - Run the "third.cc" and "fifth.cc" script from the scratch folder and show the output.

2 - Try Combining the two script such that you create a new script where you use the topology and nodes from "third.cc" and take the TCP application from "fifth.cc" instead of the UdpEchoClient application of the "third.cc". So, basically you create TCP application over WiFi topology and see the output.