Installation of Ns3 Simulator

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Prerequisite needed -

- Operating System Version is Microsoft Windows 10, either 32-bit or 64-bit.
- recommended to have a minimum of 4 GB RAM.
- Ensure you have at least 25 GB of free disk space for a smooth experience.
- Good Internet connection is necessary for downloading both VirtualBox and the Ubuntu file.

links to software installation -

- Virtual box - https://www.virtualbox.org/wiki/Downloads
- Ubuntu - https://ubuntu.com/download/desktop (Note:To avoid encountering bugs, download the latest version's before version.)
- Ns3 - https://www.nsnam.org/
- 5g lena module -

Installation process -

virtual box - create a machine - Set Ubuntu - add ns3 software-5g lena module

STEP-1 (download virtual box)

- go to this link https://www.virtualbox.org/wiki/Downloads
- select the option which configure's your pc either windows or os and download it
- after downloading,find the virtual box in your download folder
- now give double click to run the virtual box
- click next <<<<
- ready to set to add new machine
- reference:https://www.youtube.com/watch?v=nvdnQX9UkMY

STEP-2 (create a new machine)

- Download the Ubuntu file (Note: Make sure you have a stable network connection for the download).
- Open VirtualBox and click on "New" to create a new virtual machine.
- Enter a name for the virtual machine and choose the Ubuntu file as the ISO to use.
- Select the desired base memory and processor settings, and then allocate additional virtual hard disk space.
- Access the settings, and under the storage options, choose the Ubuntu file as the IDE controller.
- Now, you are all set to configure Ubuntu within the VirtualBox environment.

STEP-3 (Installation of NS3)

- After setting the ubuntu you need open the terminal
- $cd home
- $sudo apt-get update
- $sudo apt-get upgrade
- $sudo apt install build-essential autoconf automake libxmu-dev g++ python3 python3-dev pkg-config sqlite3 cmake python3-setuptools git qtbase5-dev qtchooser qt5-qmake qtbase5-dev-tools gir1.2-goocanvas-2.0 python3-gi python3-gi-cairo python3-pygraphviz gir1.2-gtk-3.0 ipython3 openmpi-bin openmpi-common openmpi-doc libopenmpi-dev autoconf cvs bzr unrar gsl-bin libgsl-dev libgslcblas0 wireshark tcpdump sqlite sqlite3 libsqlite3-dev libxml2 libxml2-dev libc6-dev libc6-dev-i386 libclang-dev llvm-dev automake python3-pip libxml2 libxml2-dev libboost-all-dev
- now,download new version of ns3 from https://www.nsnam.org/
- click the downloads zip file then click extract here
- now come to open terminal
- $clear
- $ns-allinone-3.38/ (give your version name)
- $./build.py --enable-examples --enable-tests
- $ ./ns3 run hello-simulator
- $./ns3 run scratch/first.cc
- reference:https://www.youtube.com/watch?v=vU4GE2oKao0

STEP-4 (Installation of 5g lena module)

NR prerequisites:(ns-3 and nr prerequisites are required)

- $sudo apt-get install libc6-dev
- $apt-get install sqlite sqlite3 libsqlite3-dev

ns-3 + nr installation :

- $git clone https://gitlab.com/nsnam/ns-3-dev.git
- $cd ns-3-dev

Download the NR module:

- $cd contrib
- $git clone https://gitlab.com/cttc-lena/nr.git

Switch to the latest NR release branch:

- $cd nr
- $git checkout 5g-lena-v2.4.y

Switch to the recommended ns-3 release branch:

- $ cd ../..
- $git checkout ns-3.38

Test ns-3 + nr installation:

- $./ns3 configure --enable-examples --enable-tests **(configure the ns-3 + NR project)**

- $./ns3 **(compile the ns-3 with NR by using this command)**

Upgrading 5G-LENA :

- cd ns-3-dev/contrib/nr
- git checkout master
- git pull

reference : https://youtu.be/AffId7S9OSg

https://cttc-lena.gitlab.io/nr/html/getting-started.html