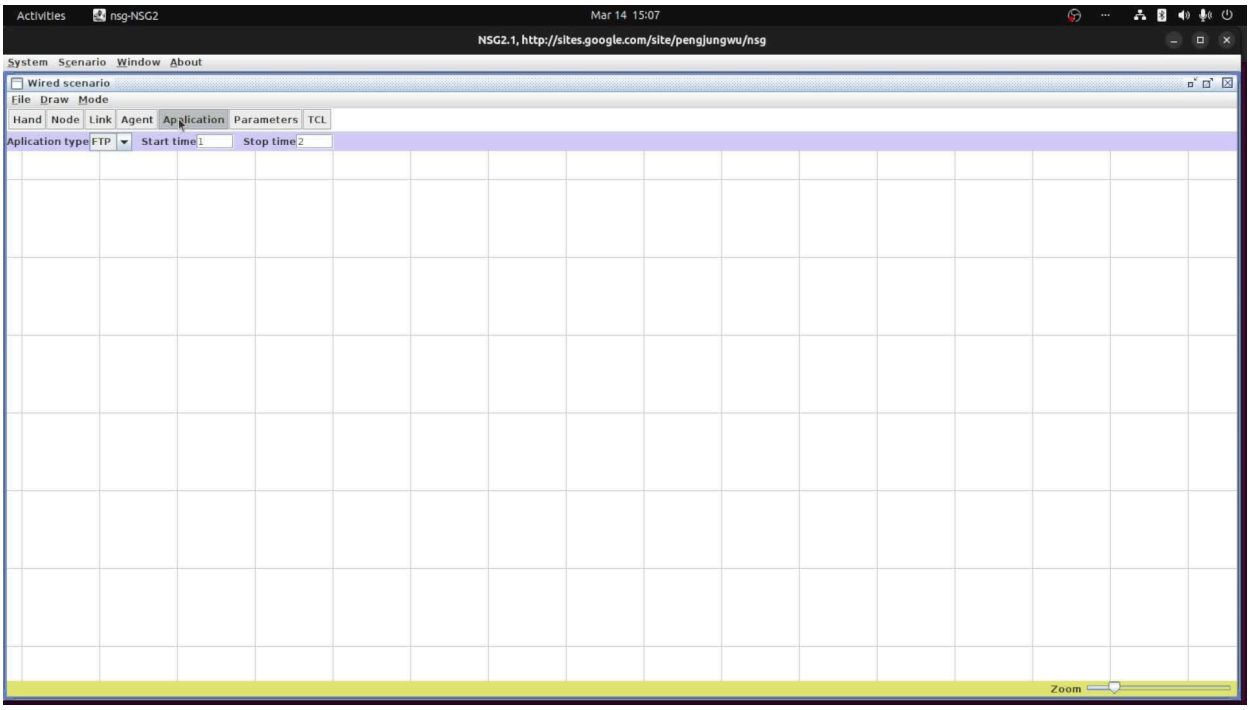
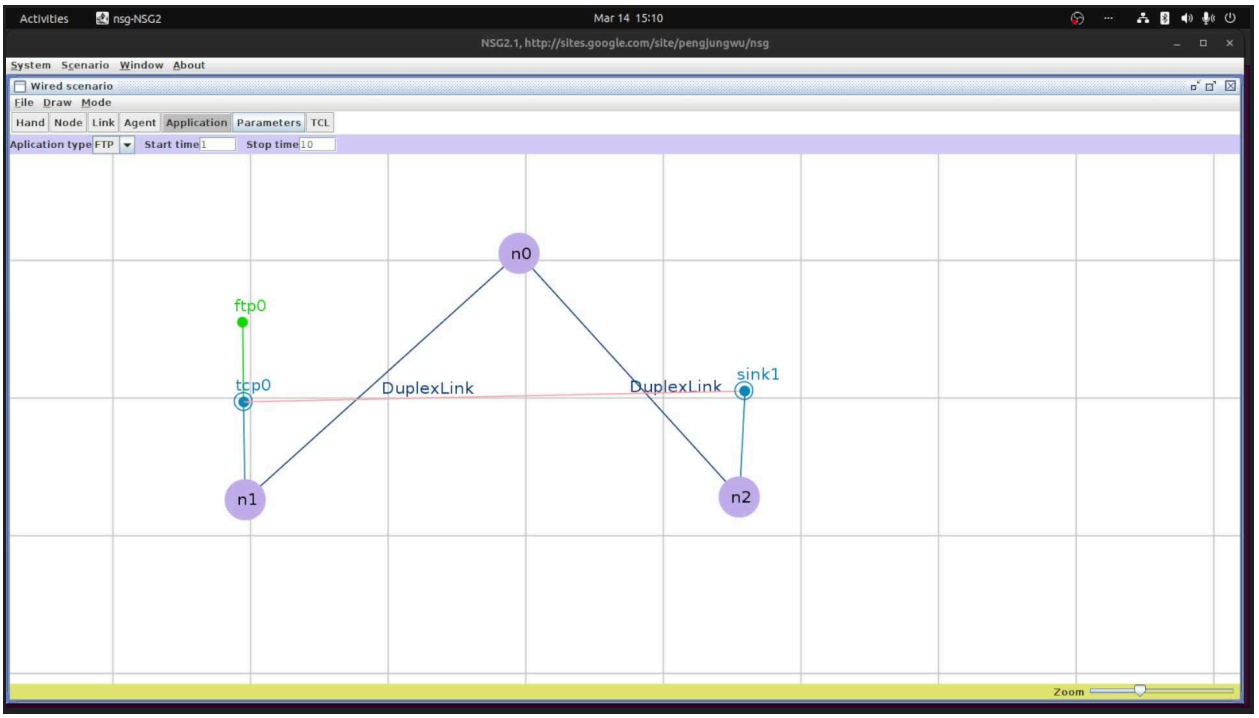
Setting up NS2 and Simulating a 3-Node Network
This video tutorial demonstrates how to install and use NS2 to simulate a simple 3-node network using a TCL script. The tutorial covers the installation process for NS2, NAM, and Java, explains how to use the NSG graphical interface to generate TCL scripts, and walks through the execution and analysis of the simulation.

Installing NS2, NAM, and Java
To install NS2 on Ubuntu, use the command sudo apt get install ns2 →. Download the NAM file and install it with sudo dpkg -i <NAM file name> →. Ensure Java is installed by checking the version with java --version →. If not, install it using sudo apt install default-jre →.

Using NSG to Generate TCL Scripts
Download the NSG jar file, enable execution permissions (chmod +x NSG-2.1.jar → or right-click and enable), and double-click to open. → Select "New Wired Scenario" in the second tab. → Place three nodes on the grid and link them using duplex links with drop tail queue type. → Set link capacity to 100 Mbps, propagation delay to 10 ms, and queue size to 50. →

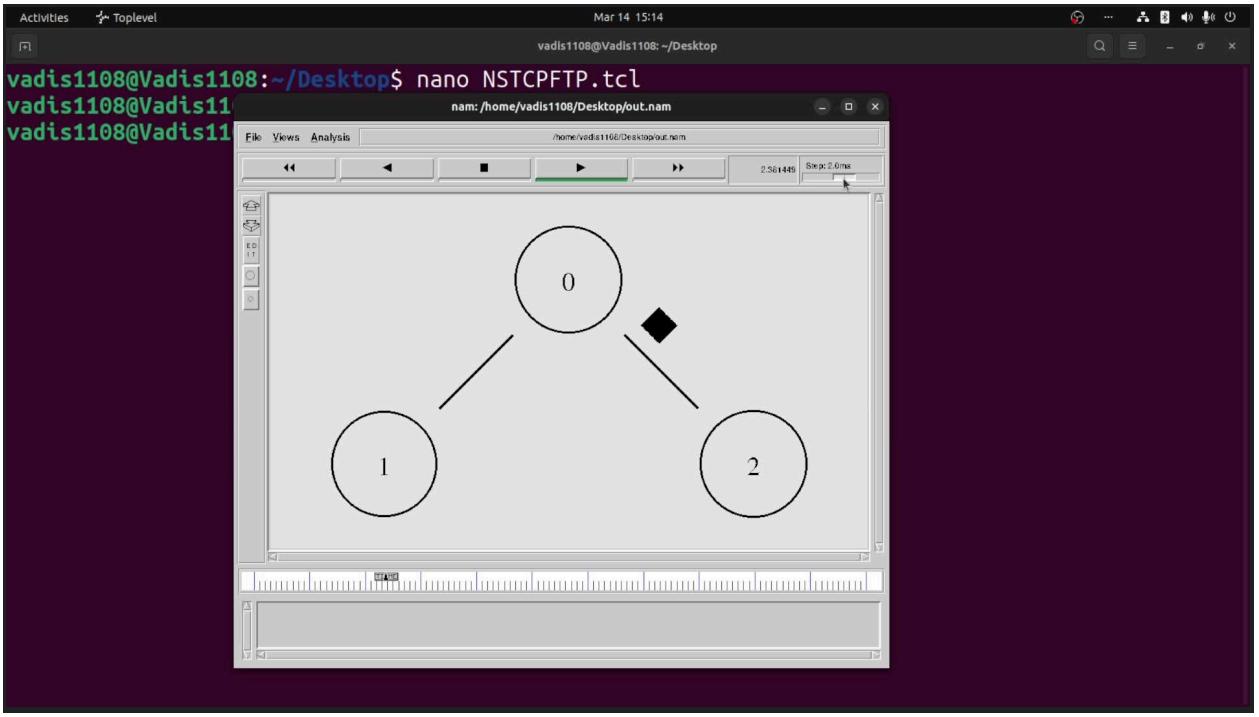


Add a TCP agent to N1 (transmitter) and a TCP sync agent to N2 (receiver). Connect these agents. → Choose FTP as the application layer protocol, set the simulation time to 10 seconds, and click on TCP 0. → Click "Parameters," increase the simulation length, and click "Done" and then "TCL" to generate the script. →



Running the Simulation and Analyzing the Trace File

Save the generated TCL script. → The script defines the simulation parameters, nodes, links, agents, and application layer protocol. → To run the simulation, use the command ns <filename>.tcl →. The Network Animator (NAM) will display the simulation. →



The key output is the trace file (out.tr), which contains a record of all events in the simulation. → Analyze this file to understand the network behavior. The out.nam file is used for the animation and is less important for analysis. →

Conclusion

This tutorial provided a step-by-step guide to setting up NS2, creating a simple network simulation using NSG, and analyzing the simulation results. The process involves installing necessary software, using a graphical interface to generate TCL scripts, running the simulation, and examining the trace file for insights into network performance. The next video will cover simulating packet drops.