

NETWORK SIMULATION

LABWORK 2

Logging, Attributes and tracing

Consider a C program `../ns-3.39/example/tutorial/first.cc`

A. Logging:

Enable Logging `LEVEL_FUNCTION` and list out functions of the class `UdpEchoServer` and `UdpEchoClient` that are called during the execution of the script.

B. Editing attributes:

1. Edit the code to set up properties of the point-to-point network device and channel:
 - Data rate = 10Mbps
 - Propagation delay = 0.01s
2. Run the updated script and compute the average delay of received packets at the server and client.
3. Using command line arguments to
 - Set number of sending packets to 100
 - Edit point-to-point network device and channel attributes to (5Mbps, 1ms) and (10Mbps, 0.01s)
 - Compare the average delay of received packets at server and client for two above parameter sets

C. Capture packet traces:

Traces include information of sent and received packets (time, size, other information).

1. ASCII tracing: output the trace to text file
2. PCAP tracing:
 - Capturing sent and received packets: .pcap file format
 - Read the output: by tcpdump or wireshark

D. Report results:

From the traces of two parameter sets in B, compute:

1. Average delay of received packets at client and server
2. Packet delivery ratio