Contrast Experimental scenario Design

1. Experiment 1 Simulation Scenario:

➤ **Scenario Preset 01:** Within the home network, multiple devices are used indiscriminately with no clear distinction in usage periods, randomly being used between 5:00 PM and 11:00 PM.

Device	IP Address	Usage Periodse	application
smart TV	214.77.243.239	5:00 pm to 11:00 pm	Streaming
ipad	63.88.15.170	5:00 pm to 11:00 pm	Streaming and web browsing
iphone	42.50.77.152	5:00 pm to 11:00 pm	Streaming
Laptop	157.26.29.100	5:00 pm to 11:00 pm	web browsing

➤ **Scenario Preset 02:** Within the home network, multiple devices have distinct usage periods, being used 24 hours throughout the day.

Device	IP Address	Usage Periods	application
smart TV	214.77.243.239	6: 00pm - 7: 30 pm	Streaming
ipad	63.88.15.170	5: 00pm - 6: 30 pm	Streaming and web browsing
iphone	42.50.77.152	7: 30pm - 11: 00 pm	Streaming
Laptop	157.26.29.100	8: 30pm - 11: 00 pm	web browsing

2. Ns-3 data simulation collection metrics

Using ns-3, set up the parameters according to the experimental scenarios in the table, and collect the following three key metrics for each device to evaluate data transfer rates and performance within the network:

➤ Latency
➤ Round-Trip Time (RTT)
➤ Bandwidth Utilization