

The codes we used on the UDP simulations are:

☑ Server: `rtg -u`

☑ Hosts: `stg -u (packetloadsize) (duration) -m (bandwidth) (max queue length)`

The codes used on the TCP simulations are:

☑ Sever: `rtcp -p (port)`

☑ Hosts: `stcp -p (port) (IP server)`

```
2.000000 10.000000 stg -u 9000 20 1.0.2.2
5.000000 7.000000 stg -u 8000 40 1.0.3.2

2.000000 5.000000 stg -u 8000 100 1.0.3.2
7.000000 10.000000 stcp -p 9000 1.0.2.2
```

```
802,3 RX 50482704 1402 DATA <2 3> <1 3> 5057 166 0 NONE Last UDP packet
802,3 TX 70000000 641 DATA <2 4> <2 1> 5058 78 0 NONE Handshake 1st
802,3 RX 70000010 641 DATA <2 4> <2 1> 5058 78 0 NONE
802,3 BTX 70000651 557 DATA <0 0> <1 4> 5060 64 0 NONE
802,3 BRX 70000661 557 DATA <0 0> <1 4> 5060 64 0 NONE
802,3 TX 70001218 525 DATA <0 0> <4 1> 5061 64 0 NONE
802,3 RX 70001228 525 DATA <0 0> <4 1> 5061 64 0 NONE
802,3 TX 70001753 678 DATA <2 4> <1 4> 5059 78 0 NONE
802,3 RX 70001763 678 DATA <2 4> <1 4> 5059 78 0 NONE Handshake 1st
802,3 TX 70002441 664 DATA <4 2> <4 1> 5062 78 0 NONE arrival
802,3 RX 70002451 664 DATA <4 2> <4 1> 5062 78 0 NONE Handshake 2nd
802,3 BTX 70003115 555 DATA <0 0> <1 2> 5064 64 0 NONE response
802,3 BRX 70003125 555 DATA <0 0> <1 2> 5064 64 0 NONE
802,3 TX 70003680 546 DATA <0 0> <2 1> 5065 64 0 NONE
802,3 RX 70003690 546 DATA <0 0> <2 1> 5065 64 0 NONE
802,3 TX 70004236 655 DATA <4 2> <1 2> 5063 78 0 NONE
802,3 RX 70004246 655 DATA <4 2> <1 2> 5063 78 0 NONE Handshare 2nd
802,3 TX 70004901 608 DATA <2 4> <2 1> 5066 70 0 NONE arrival
802,3 RX 70004911 608 DATA <2 4> <2 1> 5066 70 0 NONE
802,3 TX 70005509 12601 DATA <2 4> <2 1> 5067 1518 0 NONE Handshake 3rd
802,3 TX 70005519 581 DATA <2 4> <1 4> 5070 70 0 NONE and proper data
802,3 RX 70005519 12601 DATA <2 4> <2 1> 5067 1518 0 NONE
802,3 RX 70005529 581 DATA <2 4> <1 4> 5070 70 0 NONE
802,3 TX 70018110 12203 DATA <2 4> <2 1> 5068 1518 0 NONE
802,3 TX 70018120 12516 DATA <2 4> <1 4> 5071 1518 0 NONE
802,3 RX 70018120 12203 DATA <2 4> <2 1> 5068 1518 0 NONE
```

```
0.000000 20.000000 rtg -u 9000
```

To start the work with NCTUns the student should::

- log in as the user **student** (password: **student**)
- start Sun VirtualBox program;
- select Fedora12 virtual engine and start it by pressing Uruchom button(Fig. 1);
- When Fedora system is starting a window appears with selecting the system kernel; then the student should select the option: NCTUns (2.6.31.6-nctuns20091227) and confirm by Enter (Fig. 2);
- When the system is on, LOG IN as the user **nctuns** (password: **nctuns**);
- Before starting NCTUns klient program one should start dispatcher and coordinator programs, which are in `/usr/local/nctuns/bin/` directory. To make this one should start terminal (its abbreviation is on the board screen) and perform the command: `./run_nctuns`;

dispatcher settings: 127 0 0 1 Port 9800