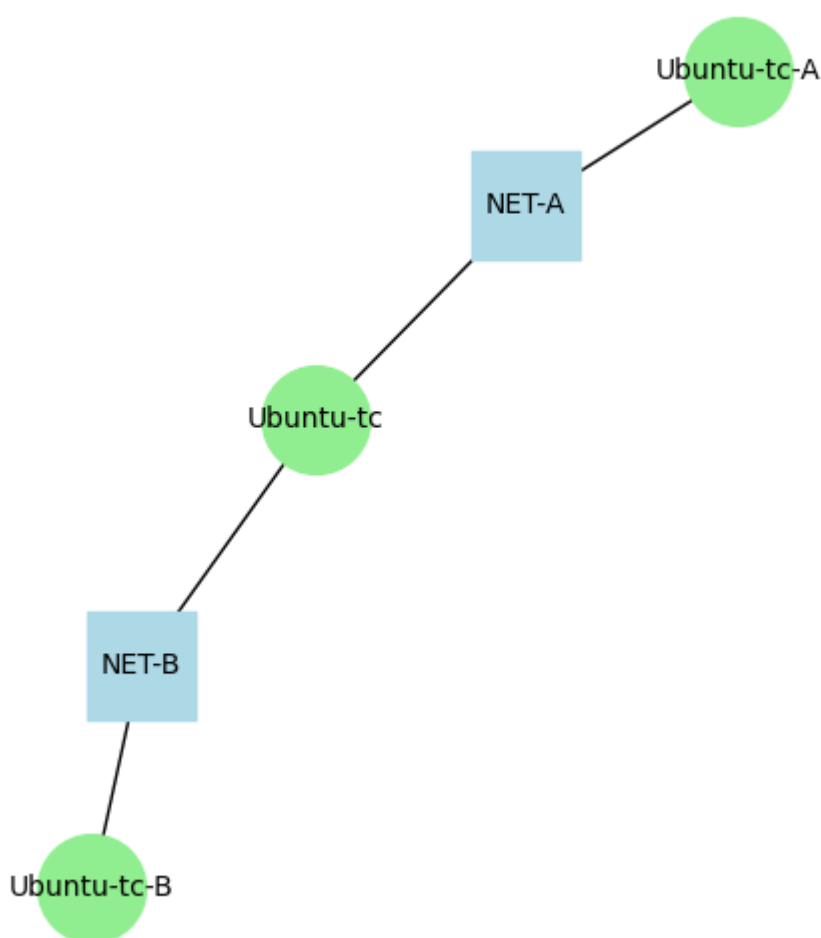


TC linux - ograniczanie pasma oraz indukowanie błędów w transmisji

programy wykorzystane do zrobienia pomiarów:

- <https://man7.org/linux/man-pages/man8/tc.8.html>
- <https://github.com/tum-lkn/tcgui>

Schemat Połączeniowy



Schemat wygenerowany za pomocą [mojego skryptu](#)

Nazwa maszyny	Karta sieciowa	Adres ip	brama	Switch wirtualny
ubuntu-tc	eth0	192.168.1.1/24	X	NET-A
	eth1	192.168.2.1/24	X	NET-B
ubuntu-tc-A	eth0	192.168.1.10/24	192.168.1.1/24	NET-A
ubuntu-tc-B	eth0	192.168.2.10/24	192.168.2.1/24	NET-B

Ustawienia na maszynie "Ubuntu-tc"

- włączenie forwardingu dla ipv4

```
echo "net.ipv4.ip_forward=1" | sudo tee -a /etc/sysctl.conf
```

- zrestartuj interfejsy sieciowe
- skopiowanie tc-gui na maszynę oraz uruchomienie

```
sudo apt install git
git clone https://github.com/tum-lkn/tcgui
cd tcgui
sudo python3 main.py --ip 127.0.0.1
```

- Otwieramy w przeglądarce firefox adres 127.0.0.1:5000

The screenshot shows the TCGUI web interface. At the top, it says "TCGUI - 4 Available Interfaces". Below this, it lists the available interfaces: eth0 (192.168.1.1), eth1 (192.168.2.1), eth2 (172.30.98.243), and lo (127.0.0.1). The selected interface is eth0 (192.168.1.1). Below the interface list, there is a table with columns: Name, Current Value, New Value, Variance / Correlation, and New Value. The table contains rows for Rate, Delay, Loss, Duplicate, Reorder, Corrupt, and Limit. Each row has a dropdown menu for the New Value. Below the table, there are two buttons: "Apply eth0 (192.168.1.1) Rules" and "Remove eth0 (192.168.1.1) Rules".

Name	Current Value	New Value	Variance / Correlation	New Value
Rate	None	mbit		
Delay	None	ms	±None	ms
Loss	None	%	None	%
Duplicate	None	%		
Reorder	None	%	None	%
Corrupt	None	%		
Limit	None			

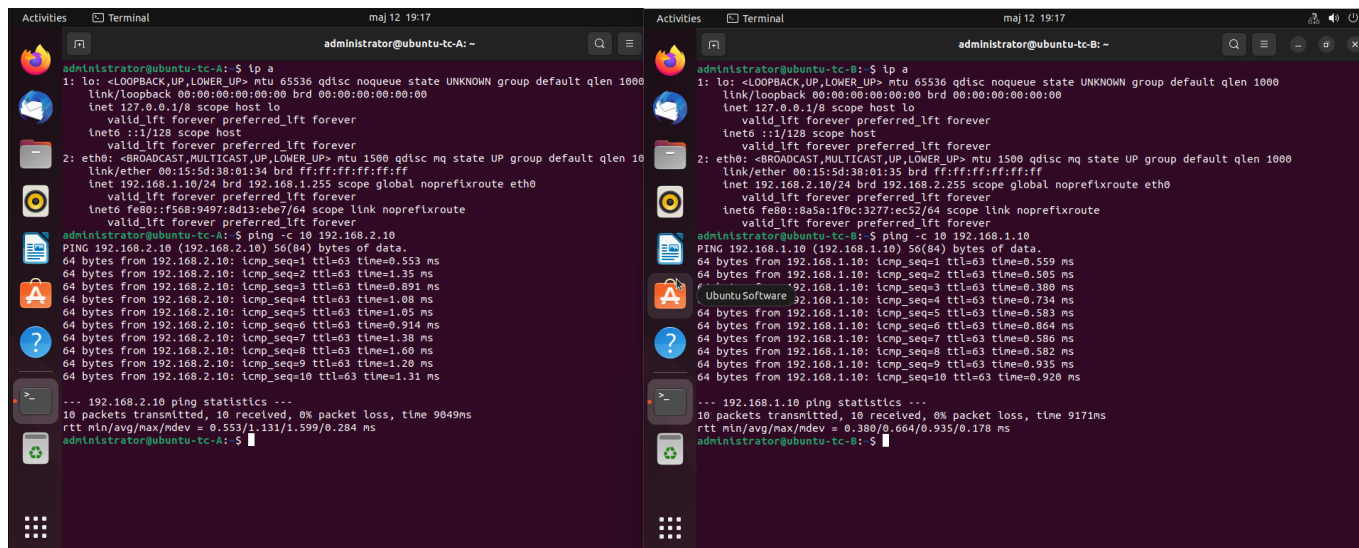
Ustawienia na reszcie maszyn

```
sudo apt-get update
sudo apt-get install iperf3
```

Musimy je jeszcze zaadresować statycznie za pomocą GUI albo za pomocą netplan

Podstawowe testy opóźnień

Test bez dodanego opóźnienia



The image shows two terminal windows side-by-side, both running on Ubuntu. The left window is titled 'administrator@ubuntu-tc-A: ~' and the right window is titled 'administrator@ubuntu-tc-B: ~'. Both windows show the output of the 'ip a' command, displaying network interface details for 'lo' and 'eth0'. The left window also shows the output of a 'ping -c 10 192.168.2.10' command, showing successful pings with various times. The right window shows the output of a 'ping -c 10 192.168.1.10' command, also showing successful pings with various times. The terminal windows are set against a dark background with a light-colored text.

Inne Testy

Parametry tc

Wykonanie testu

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