

PEMROGRAMAN JARINGAN
Tugas Praktikum UDP 2



Class E

05111840000127 - Salsabila Harlen

Lecturer :

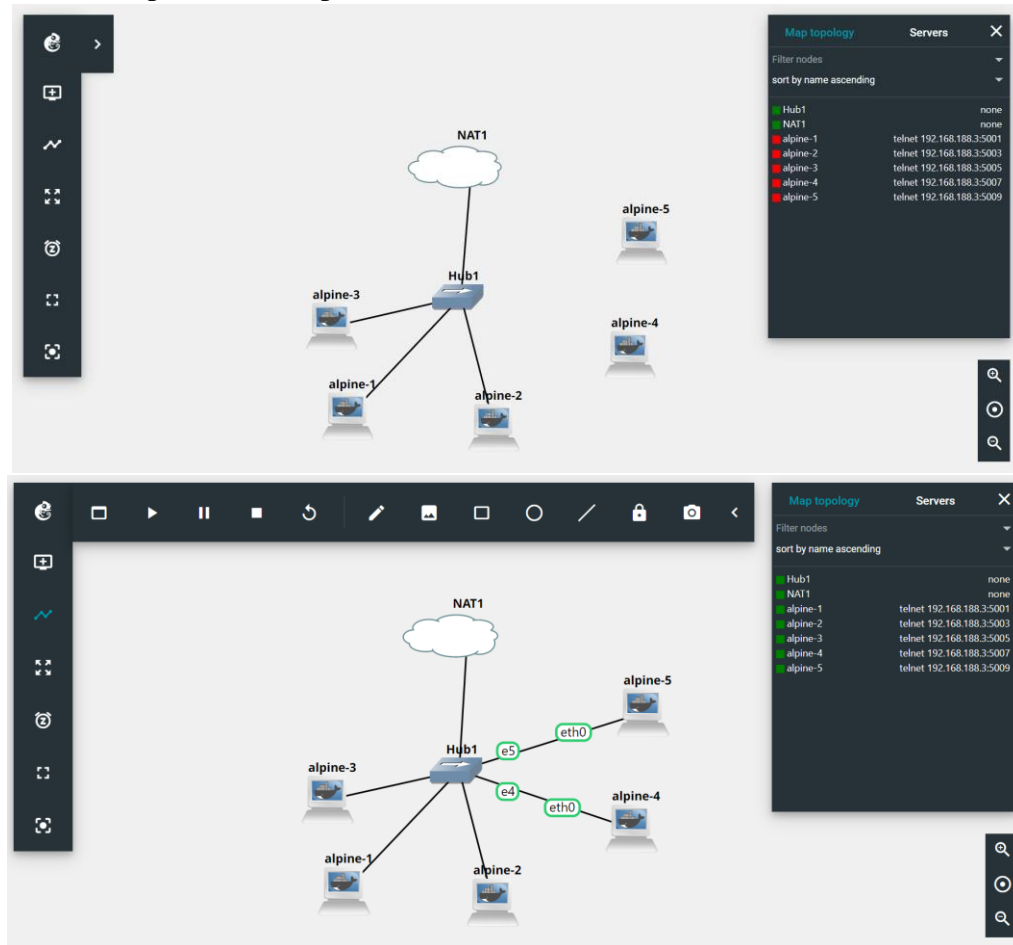
Royyana M. Ijtihadie

Informatics Department
Faculty of ELECTICS
Institut Teknologi Sepuluh Nopember (ITS) Surabaya
2021

Berikut ini merupakan konfigurasi dengan 3 host. gunakan file project berikut ini

https://drive.google.com/file/d/1_kGda6tKbWe6hOmzQIBrQOOfw0wVEOlw8/view?usp=sharing

1. Menambahkan Alpine 4 dan Alpine 5



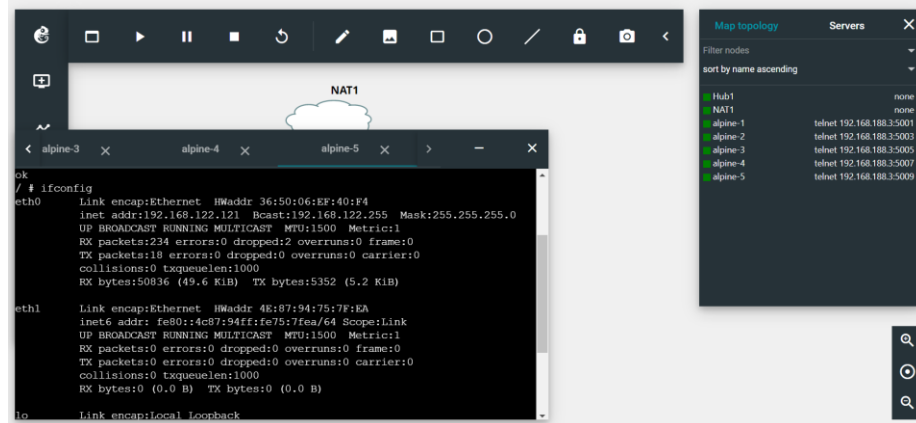
2. Ifconfig Alpine 4 dan 5 untuk mengecek ip.

The terminal window shows the output of the ifconfig command for alpine-4 and alpine-5. The output for alpine-4 shows the eth0 interface with IP address 192.168.122.177. The output for alpine-5 shows the eth0 interface with IP address 192.168.122.178. The terminal window also shows the output of the ifconfig command for alpine-3 and alpine-2.

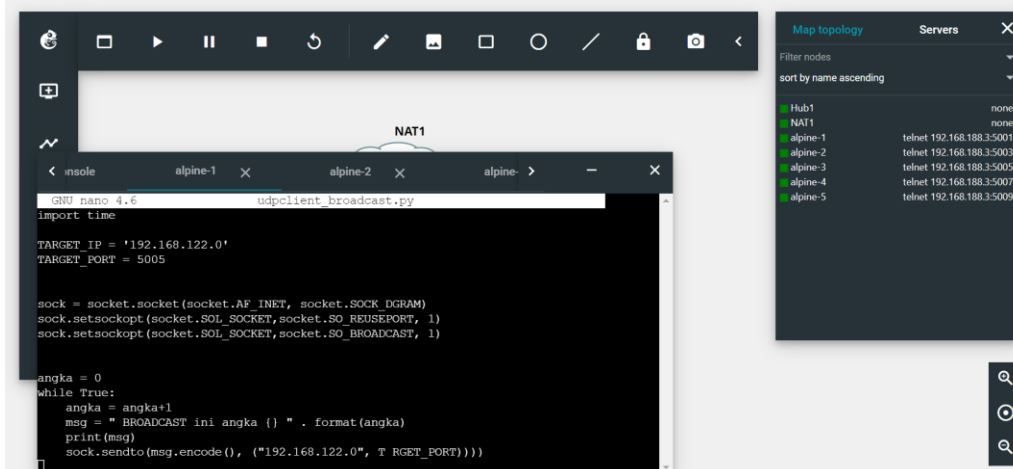
```
alpine-3: ~
# ifconfig
eth0: Link encap:Ethernet HWaddr EE:B3:A5:4D:07:A3
      inet addr:192.168.122.177 Bcast:192.168.122.255 Mask:255.255.255.0
      UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
      RX packets:222 errors:0 dropped:1 overruns:0 frame:0
      TX packets:19 errors:0 dropped:0 overruns:0 carrier:0
      collisions:0 txqueuelen:1000
      RX bytes:51486 (50.2 KiB)  TX bytes:5352 (5.2 KiB)

eth1:  Link encap:Ethernet HWaddr 2E:39:DD:BD:7D:B1
      inet6 addr: fe80::2c39:ddff:febd:7db1/64 Scope:Link
      UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
      RX packets:0 errors:0 dropped:0 overruns:0 frame:0
      TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
      collisions:0 txqueuelen:1000
      RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)

lo:    Link encap:Local Loopback
      inet addr:127.0.0.1 Mask:255.0.0.0
```



3. Clone Repository github pada tiap alpine dengan command <https://github.com/rm77/progjar.git>
4. Edit dan sesuaikan parameter dan variable pada program progjar2/udpclient_boradcast.py di alpine-1



5. Edit dan sesuaikan parameter dan variable pada program progjar2/udpserver_boradcast.py di alpine-2, 3, 4, dan 5 dengan menyesuaikan ip masing – masing.

Alpine 2 : 192.168.122.154

Alpine 3 : 192.168.122.244

Alpine 4 : 192.168.122.177

Alpine 5 : 192.168.122.121

The terminal window shows the following code:

```
GNU nano 4.6 udpserver_broadcast.py
import socket

SERVER_IP = '192.168.122.154'
SERVER_PORT = 5005

sock = socket.socket(socket.AF_INET, socket.SOCK_DGRAM)
sock.setsockopt(socket.SOL_SOCKET, socket.SO_REUSEPORT, 1)
sock.setsockopt(socket.SOL_SOCKET, socket.SO_BROADCAST, 1)
sock.bind(("", SERVER_PORT))

while True:
    data, addr = sock.recvfrom(1024)
    print("diterima ", data)
    print("dikirim oleh ", addr)
```

The servers panel on the right lists the following nodes:

Node	IP
Hub1	none
NAT1	none
alpine-1	telnet 192.168.188.35001
alpine-2	telnet 192.168.188.35003
alpine-3	telnet 192.168.188.35005
alpine-4	telnet 192.168.188.35007
alpine-5	telnet 192.168.188.35009

The terminal window shows the following code:

```
GNU nano 4.6 udpserver_broadcast.py
import socket

SERVER_IP = '192.168.122.244'
SERVER_PORT = 5005

sock = socket.socket(socket.AF_INET, socket.SOCK_DGRAM)
sock.setsockopt(socket.SOL_SOCKET, socket.SO_REUSEPORT, 1)
sock.setsockopt(socket.SOL_SOCKET, socket.SO_BROADCAST, 1)
sock.bind(("", SERVER_PORT))

while True:
    data, addr = sock.recvfrom(1024)
    #buffer size 1024
```

The servers panel on the right lists the following nodes:

Node	IP
Hub1	none
NAT1	none
alpine-1	telnet 192.168.188.35001
alpine-2	telnet 192.168.188.35003
alpine-3	telnet 192.168.188.35005
alpine-4	telnet 192.168.188.35007
alpine-5	telnet 192.168.188.35009

The terminal window shows the following code:

```
GNU nano 4.6 udpserver_broadcast.py
import socket

SERVER_IP = '192.168.122.177'
SERVER_PORT = 5005

sock = socket.socket(socket.AF_INET, socket.SOCK_DGRAM)
sock.setsockopt(socket.SOL_SOCKET, socket.SO_REUSEPORT, 1)
sock.setsockopt(socket.SOL_SOCKET, socket.SO_BROADCAST, 1)
sock.bind(("", SERVER_PORT))

while True:
    data, addr = sock.recvfrom(1024)
```

The servers panel on the right lists the following nodes:

Node	IP
Hub1	none
NAT1	none
alpine-1	telnet 192.168.188.35001
alpine-2	telnet 192.168.188.35003
alpine-3	telnet 192.168.188.35005
alpine-4	telnet 192.168.188.35007
alpine-5	telnet 192.168.188.35009

The terminal window shows the following code:

```
GNU nano 4.6 udpserver_broadcast.py Modified
import socket

SERVER_IP = '192.168.122.121'
SERVER_PORT = 5005

sock = socket.socket(socket.AF_INET, socket.SOCK_DGRAM)
sock.setsockopt(socket.SOL_SOCKET, socket.SO_REUSEPORT, 1)
sock.setsockopt(socket.SOL_SOCKET, socket.SO_BROADCAST, 1)
sock.bind(("", SERVER_PORT))

while True:
    data, addr = sock.recvfrom(1024)
```

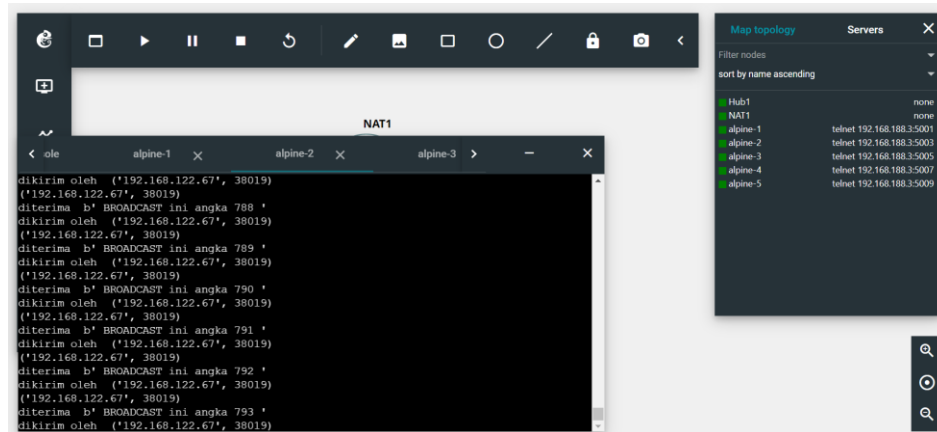
The servers panel on the right lists the following nodes:

Node	IP
Hub1	none
NAT1	none
alpine-1	telnet 192.168.188.35001
alpine-2	telnet 192.168.188.35003
alpine-3	telnet 192.168.188.35005
alpine-4	telnet 192.168.188.35007
alpine-5	telnet 192.168.188.35009

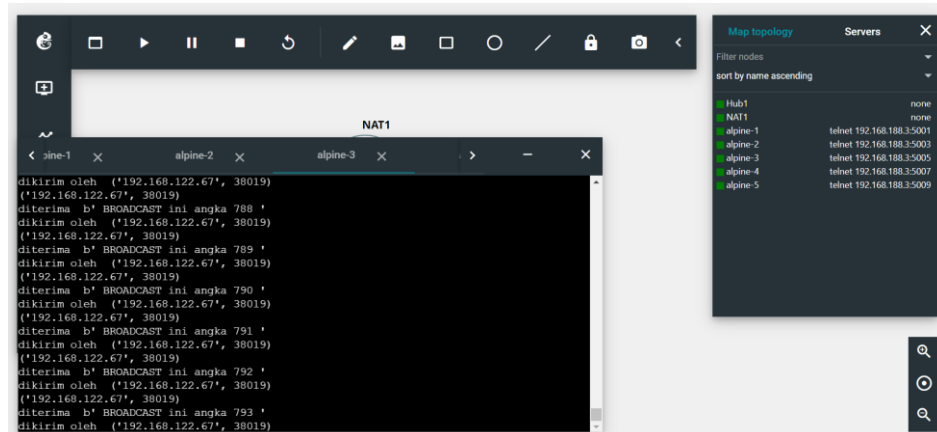
Jalankan dengan urutan, server dan kemudian client

6. Jalankan program progjar2/udpserver_broadcast.py di alpine-2, 3, 4, dan 5

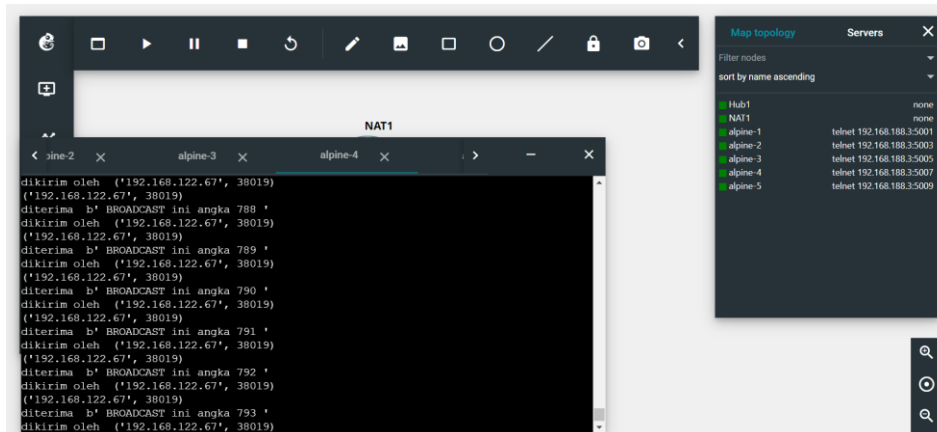
- Alpine 2



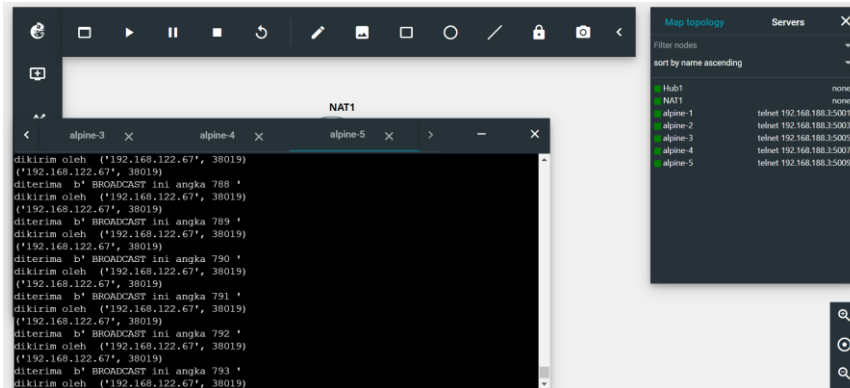
- Alpine 3



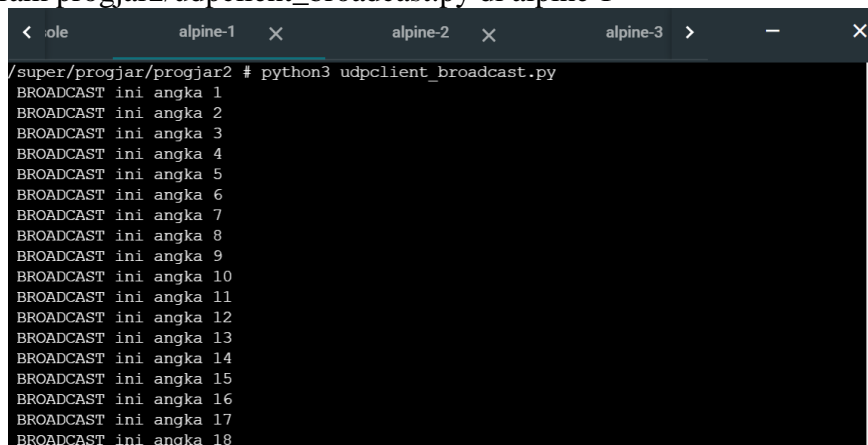
- Alpine 4



- Alpine 5



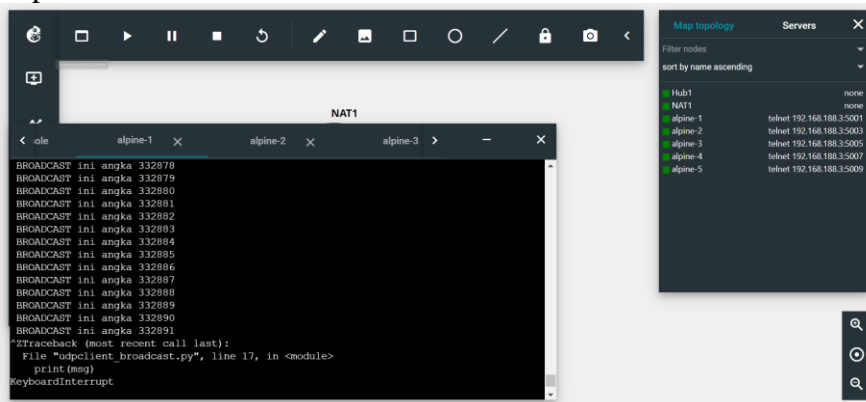
- Jalankan program progjar2/udpclient_broadcast.py di alpine 1



Jalankan dengan urutan client, baru kemudian server

- Hasil menjalankan client terlebih dahulu, kemudian server.

- Alpine 1



- Alpine 2

The screenshot shows a network simulation interface. On the left, a terminal window for 'alpine-2' displays a series of broadcast messages from 'NAT1' with IP addresses ranging from 332551 to 332557. On the right, a 'Servers' panel lists the following nodes and their IP addresses:

Node	IP Address
Hub1	none
NAT1	none
alpine-1	telnet 192.168.188.3:5001
alpine-2	telnet 192.168.188.3:5003
alpine-3	telnet 192.168.188.3:5005
alpine-4	telnet 192.168.188.3:5007
alpine-5	telnet 192.168.188.3:5009

- Alpine 3

The screenshot shows a network simulation interface. On the left, a terminal window for 'alpine-3' displays a series of broadcast messages from 'NAT1' with IP addresses ranging from 332556 to 332561. On the right, a 'Servers' panel lists the following nodes and their IP addresses:

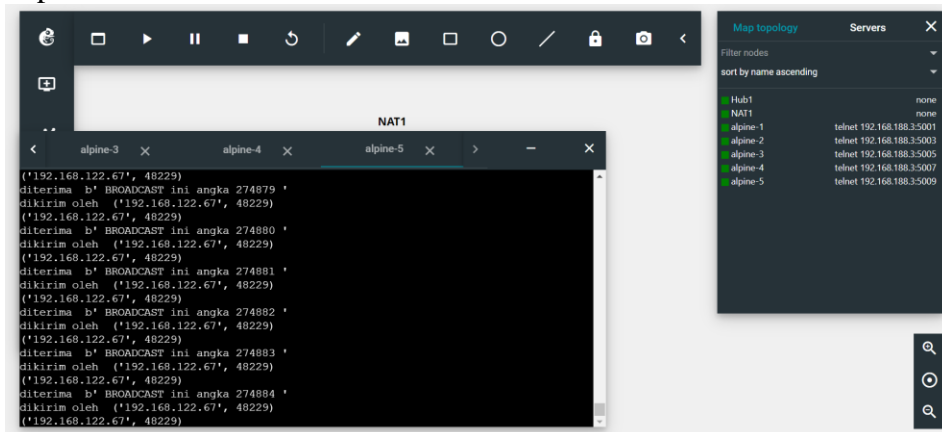
Node	IP Address
Hub1	none
NAT1	none
alpine-1	telnet 192.168.188.3:5001
alpine-2	telnet 192.168.188.3:5003
alpine-3	telnet 192.168.188.3:5005
alpine-4	telnet 192.168.188.3:5007
alpine-5	telnet 192.168.188.3:5009

- Alpine 4

The screenshot shows a network simulation interface. On the left, a terminal window for 'alpine-4' displays a series of broadcast messages from 'NAT1' with IP addresses ranging from 295199 to 295204. On the right, a 'Servers' panel lists the following nodes and their IP addresses:

Node	IP Address
Hub1	none
NAT1	none
alpine-1	telnet 192.168.188.3:5001
alpine-2	telnet 192.168.188.3:5003
alpine-3	telnet 192.168.188.3:5005
alpine-4	telnet 192.168.188.3:5007
alpine-5	telnet 192.168.188.3:5009

- Alpine 5



Kesimpulan

Hasil dari menjalankan server terlebih baru lalu client yaitu Alpine 2, 3, 4, dan 5 mendapat broadcast message secara lengkap dan memiliki isi yang sama.

Namun, hasil dari menjalankan client terlebih dahulu lalu server yaitu alpine 2, 3, 4, dan 5 tidak mendapatkan broadcast message secara lengkap. Dapat disimpulkan bahwa tidak semua broadcast dari client masuk ke server. Hal ini bergantung pada kapan server berjalan lalu broadcast message akan masuk.