

Soal

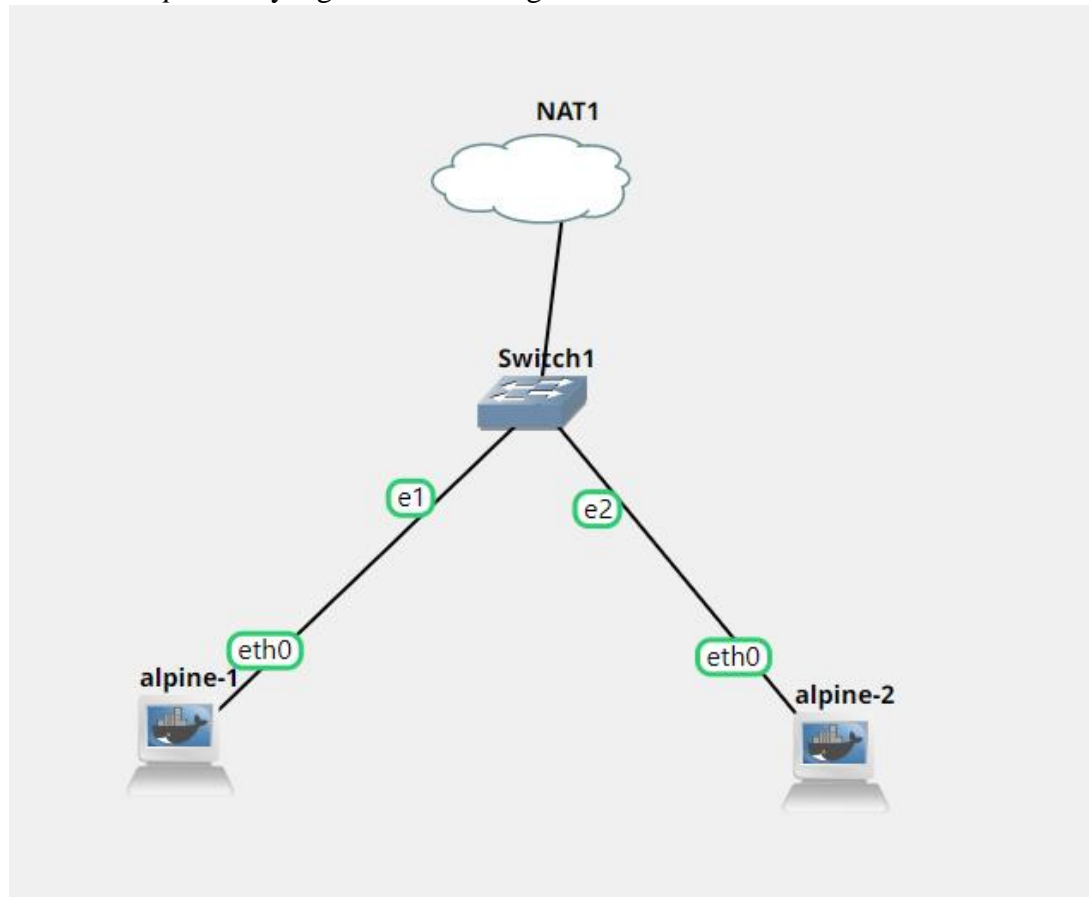
Semua tugas berikut ini HARUS dijalankan di SIMULATOR

1. jalankan program server seperti dalam pembahasan
2. buatlah program client yang dapat melakukan 100 request get pada dalam satu saat untuk operasi get file "pokijan.jpg"
3. capture dan submitlah poin 1 dan 2 dalam satu dokumen pdf. berikan DESKRIPSI dan PENJELASAN

Jawab

Menjalankan Program Server

1. Topologi yang digunakan dengan menggunakan *alpine-1* yang bertindak sebagai server dan *alpine-2* yang bertindak sebagai client



2. Lalu kita cek ip address untuk *aphine-1* dengan perintah *ifconfig*

```
GNS3 console    alpine-1  X
/home/Pemrograman_Jaringan_D # ifconfig
eth0      Link encap:Ethernet  HWaddr 72:0F:C6:CA:59:3E
          inet addr:192.168.122.74  Bcast:192.168.122.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:4047 errors:0 dropped:0 overruns:0 frame:0
          TX packets:1859 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:4307717 (4.1 MiB)  TX bytes:107722 (105.1 KiB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:65536  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)

/home/Pemrograman_Jaringan_D #
```

3. Kita ubah ip pada file server

```
GNS3 console    alpine-1  X
GNU nano 4.6    file_server.py    Modified
self.my_socket.bind(self.ipinfo)
self.my_socket.listen(1)
while True:
    self.connection, self.client_address = self.my_socket.accept()
    logging.warning(f"connection from {self.client_address}")

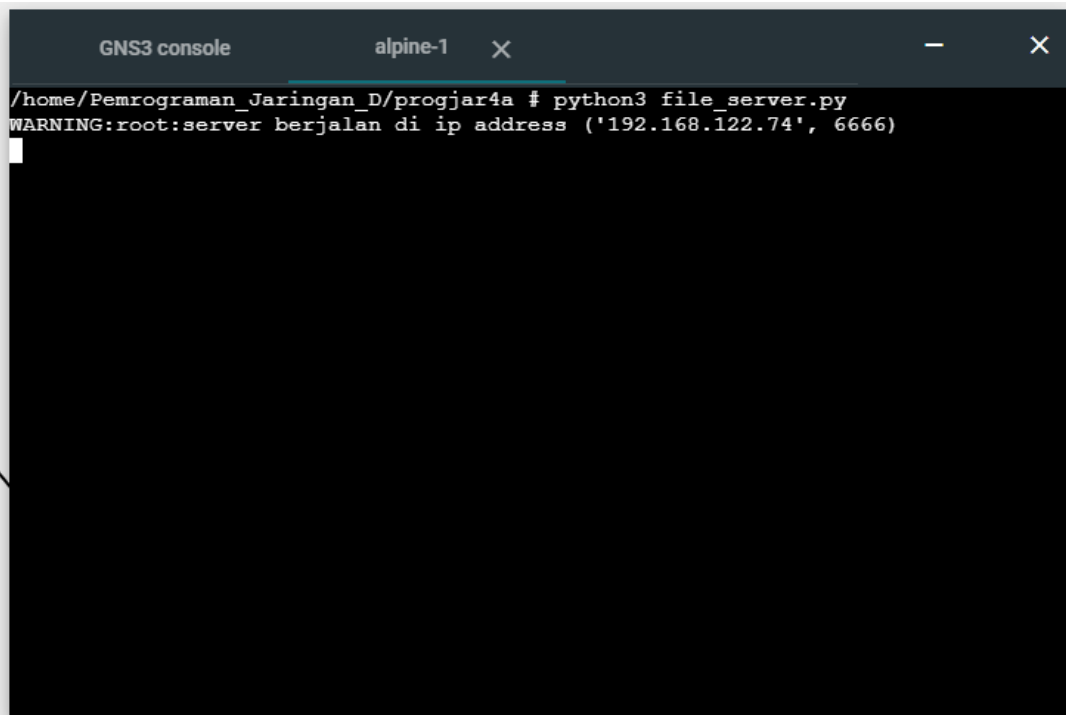
    clt = ProcessTheClient(self.connection, self.client_address)
    clt.start()
    self.the_clients.append(clt)

def main():
    svr = Server(ipaddress='192.168.122.74',port=6666)
    svr.start()

if __name__ == "__main__":
    main()

^G Get Help    ^O Write Out  ^W Where Is   ^K Cut Text   ^J Justify    ^C Cur Pos
^X Exit        ^R Read File  ^\ Replace    ^U Paste Text ^T To Spell   ^_ Go To Line
```

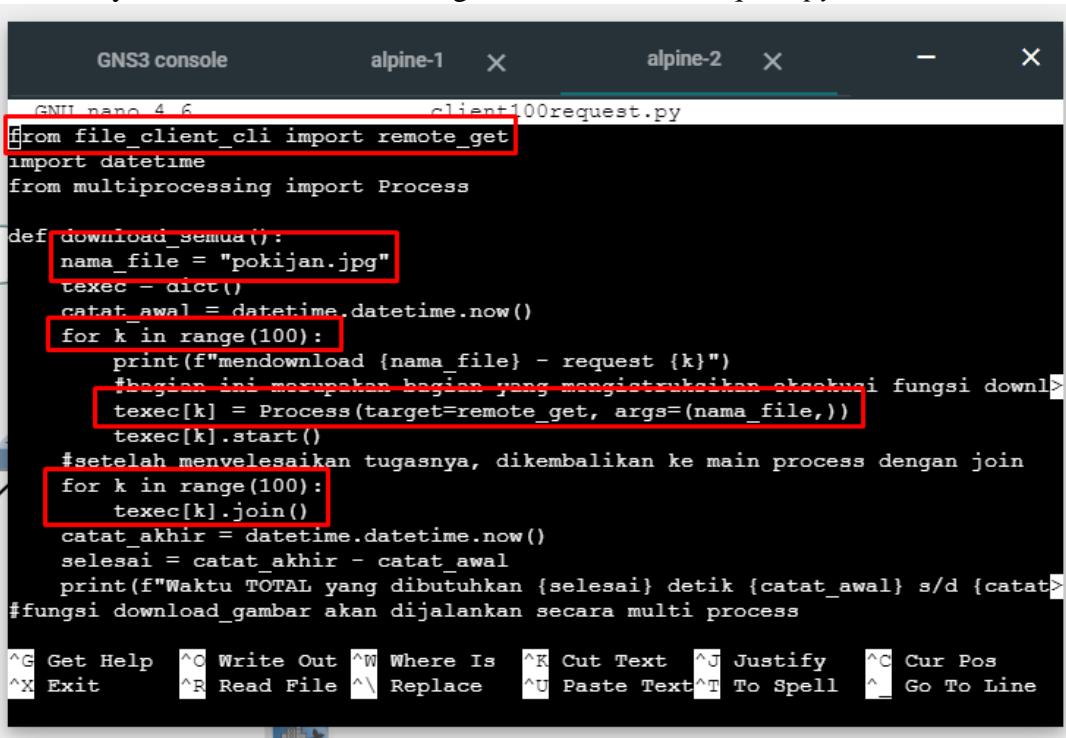
4. Jalankan file server



```
GNS3 console  alpine-1  X
/home/Pemrograman_Jaringan_D/progjar4a # python3 file_server.py
WARNING:root:server berjalan di ip address ('192.168.122.74', 6666)
```

Menjalankan 100 request file pokijan.jpg

1. Disini saya membuat file client dengan nama *client100request.py*



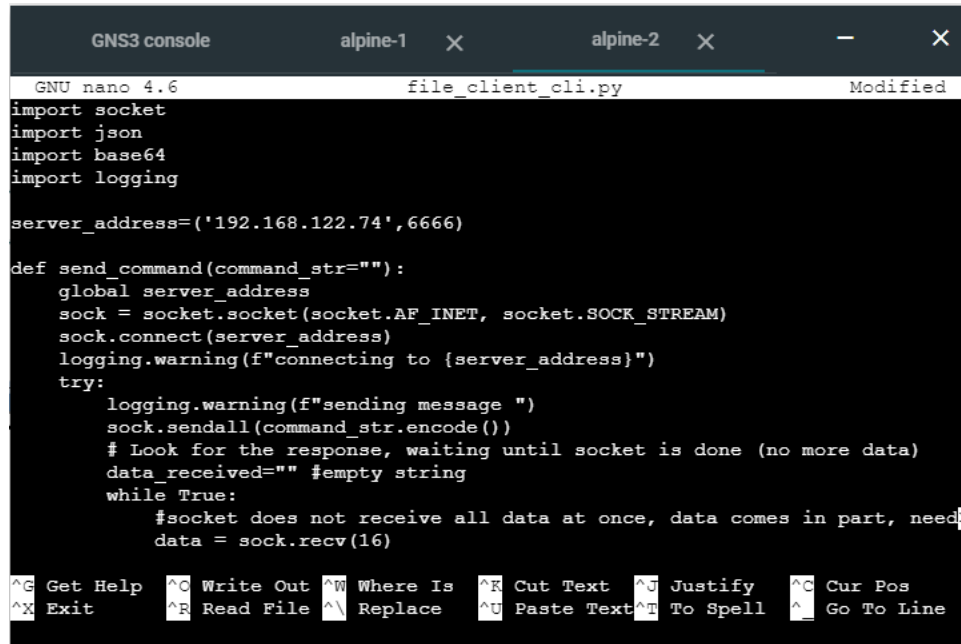
```
GNS3 console  alpine-1  X  alpine-2  X
GNU nano 4.6  client100request.py
from file_client_cli import remote_get
import datetime
from multiprocessing import Process

def download_semua():
    nama_file = "pokijan.jpg"
    texec = dict()
    catat_awal = datetime.datetime.now()
    for k in range(100):
        print(f"mendownload {nama_file} - request {k}")
        #bagian ini merupakan bagian yang menginstruksikan eksekusi fungsi downl
        texec[k] = Process(target=remote_get, args=(nama_file,))
        texec[k].start()
    #setelah menvelesaikan tugasnya, dikembalikan ke main process dengan join
    for k in range(100):
        texec[k].join()
    catat_akhir = datetime.datetime.now()
    selesai = catat_akhir - catat_awal
    print(f"Waktu TOTAL yang dibutuhkan {selesai} detik {catat_awal} s/d {catat_akhir}")
#fungsi download_gambar akan dijalankan secara multi process

^G Get Help  ^O Write Out  ^W Where Is  ^R Cut Text  ^J Justify  ^C Cur Pos
^X Exit      ^R Read File  ^\ Replace  ^U Paste Text ^T To Spell  ^_ Go To Line
```

Dengan keterangan sebagai berikut,

- Menggunakan fungsi **remote_get** pada file *file_client_cli.py*
 - Mendefinisikan nama file yaitu “pokijan.jpg”
 - Melakukan looping 100 kali untuk melakukan 100 request
 - Menjalankan fungsi **remote_get** dengan multiprocessing
2. Mengganti ip server pada *file_client_cli.py* sesuai dengan ip server dan port yang kita jalankan



```

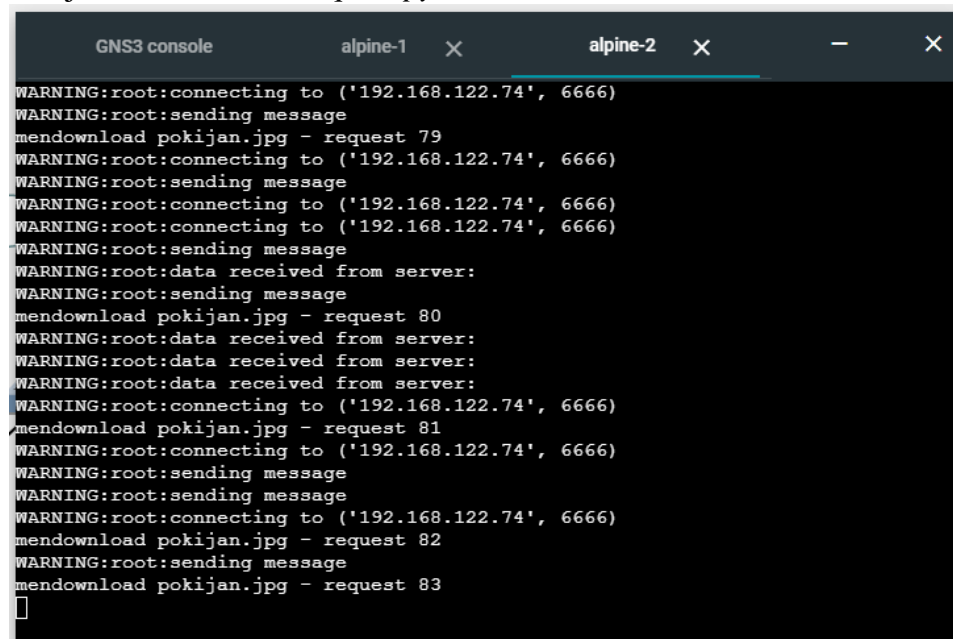
GNU nano 4.6 file_client_cli.py Modified
import socket
import json
import base64
import logging

server_address=('192.168.122.74',6666)

def send_command(command_str=""):
    global server_address
    sock = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
    sock.connect(server_address)
    logging.warning(f"connecting to {server_address}")
    try:
        logging.warning(f"sending message ")
        sock.sendall(command_str.encode())
        # Look for the response, waiting until socket is done (no more data)
        data_received="" #empty string
        while True:
            #socket does not receive all data at once, data comes in part, need
            data = sock.recv(16)

```

3. Menjalankan *client100request.py*



```

WARNING:root:connecting to ('192.168.122.74', 6666)
WARNING:root:sending message
mdownload pokijan.jpg - request 79
WARNING:root:connecting to ('192.168.122.74', 6666)
WARNING:root:sending message
WARNING:root:connecting to ('192.168.122.74', 6666)
WARNING:root:connecting to ('192.168.122.74', 6666)
WARNING:root:sending message
WARNING:root:data received from server:
WARNING:root:sending message
mdownload pokijan.jpg - request 80
WARNING:root:data received from server:
WARNING:root:data received from server:
WARNING:root:data received from server:
WARNING:root:connecting to ('192.168.122.74', 6666)
mdownload pokijan.jpg - request 81
WARNING:root:connecting to ('192.168.122.74', 6666)
WARNING:root:sending message
WARNING:root:sending message
WARNING:root:connecting to ('192.168.122.74', 6666)
mdownload pokijan.jpg - request 82
WARNING:root:sending message
mdownload pokijan.jpg - request 83

```

```
GNS3 console    alpine-1 X    alpine-2 X    -    X

WARNING:root:connection from ('192.168.122.227', 38282)
WARNING:root:string dipooses: GET pokijan.jpg
WARNING:root:memproses request: GET
WARNING:root:connection from ('192.168.122.227', 38284)
WARNING:root:string dipooses: GET pokijan.jpg
WARNING:root:memproses request: GET
WARNING:root:connection from ('192.168.122.227', 38286)
WARNING:root:connection from ('192.168.122.227', 38288)
WARNING:root:string dipooses: GET pokijan.jpg
WARNING:root:memproses request: GET
WARNING:root:string dipooses: GET pokijan.jpg
WARNING:root:memproses request: GET
WARNING:root:string dipooses: GET pokijan.jpg
WARNING:root:memproses request: GET
WARNING:root:connection from ('192.168.122.227', 38290)
WARNING:root:string dipooses: GET pokijan.jpg
WARNING:root:memproses request: GET
WARNING:root:connection from ('192.168.122.227', 38292)
WARNING:root:string dipooses: GET pokijan.jpg
WARNING:root:memproses request: GET
WARNING:root:connection from ('192.168.122.227', 38294)
WARNING:root:string dipooses: GET pokijan.jpg
WARNING:root:memproses request: GET

```