

PEMROGRAMAN JARINGAN E
IMPLEMENTASI SERVER



Fandi Wahyu Rusydi
05111840000108

Dosen Pengampu:
Royyana Muslim Ijtihadie, S.Kom., M.Kom., Ph.D.

Departemen Teknik Informatika
Fakultas Teknologi Elektro dan Informatika Cerdas
Institut Teknologi Sepuluh Nopember (ITS)
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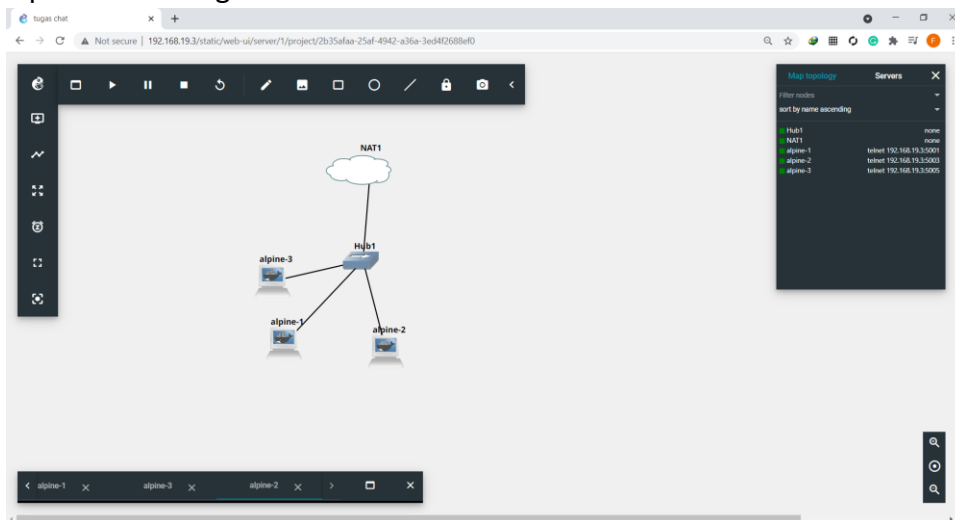
Praktikum

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

Dokumentasi :

1. Arsitektur Jaringan, nantinya alpine-1 akan digunakan sebagai server, alpine-2 dan alpine-3 tidak digunakan



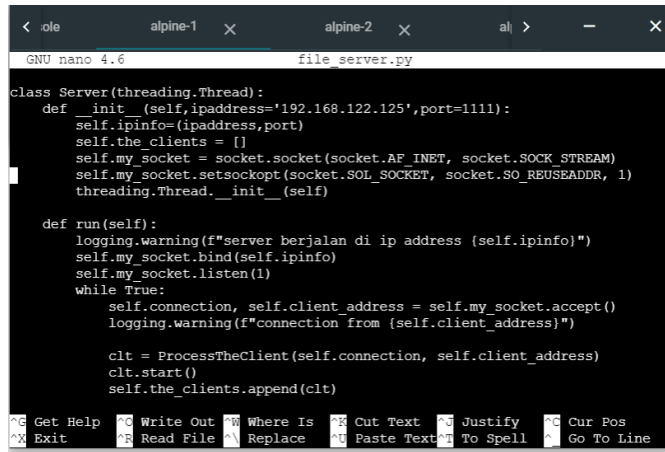
2. Cek ip pada server (alpine-1) dengan command **ifconfig**

```
alpine-1 # ifconfig
eth0      Link encap:Ethernet  HWaddr BA:7F:0F:97:43:07
          inet addr:192.168.122.125  Bcast:192.168.122.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:1372 errors:0 dropped:0 overruns:0 frame:0
          TX packets:17 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:87516 (85.4 KiB)  TX bytes:4410 (4.3 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_E/progjar4a #
```

3. Pada server (alpine-1) buka folder progjar4a, lalu ubah file **file_server.py** sesuaikan dengan ip alpine-1. Ada 2 line code yang harus diubah yaitu pada **class Server(threading.Thread)** dan pada **main**



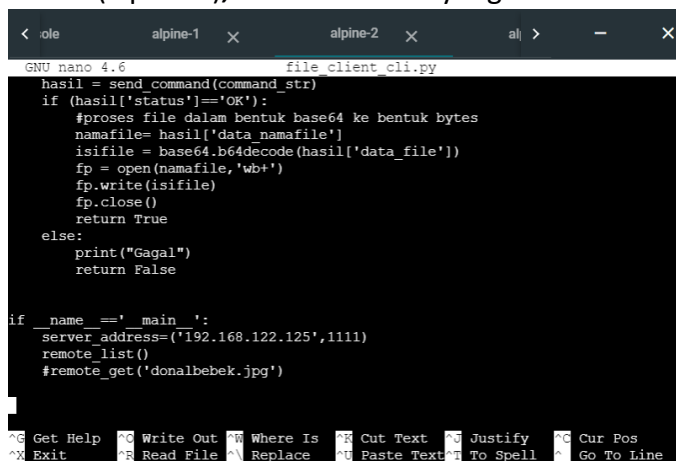
```
GNU nano 4.6 file_server.py
class Server(threading.Thread):
    def __init__(self,ipaddress='192.168.122.125',port=1111):
        self.ipinfo=(ipaddress,port)
        self.the_clients = []
        self.my_socket = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
        self.my_socket.setsockopt(socket.SOL_SOCKET, socket.SO_REUSEADDR, 1)
        threading.Thread.__init__(self)

    def run(self):
        logging.warning(f"server berjalan di ip address {self.ipinfo}")
        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)

if __name__ == '__main__':
    server = Server('192.168.122.125', 1111)
    server.start()
    while True:
        time.sleep(1)
```

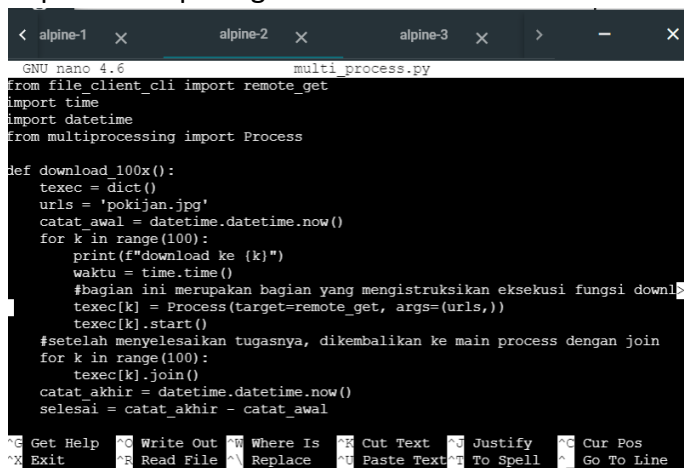
4. Pada client (alpine-2) ubah server_address pada file **file_client.py** sesuai dengan ip server (alpine-1), ada 2 line code yang harus diubah



```
GNU nano 4.6 file_client.py
hasil = send_command(command_str)
if (hasil['status']=='OK'):
    #proses file dalam bentuk base64 ke bentuk bytes
    namafile= hasil['data_namafile']
    isifile = base64.b64decode(hasil['data_file'])
    fp = open(namafile,'wb+')
    fp.write(isifile)
    fp.close()
    return True
else:
    print("Gagal")
    return False

if __name__ == '__main__':
    server_address=('192.168.122.125',1111)
    remote_list()
    #remote_get('donalbebek.jpg')
```

5. Buat file baru yang berfungsi untuk melakukan 100 request get, disini digunakan file **multi_process.py** dari tugas 3 dengan sedikit modifikasi, untuk code lebih lengkap dapat dilihat pada github

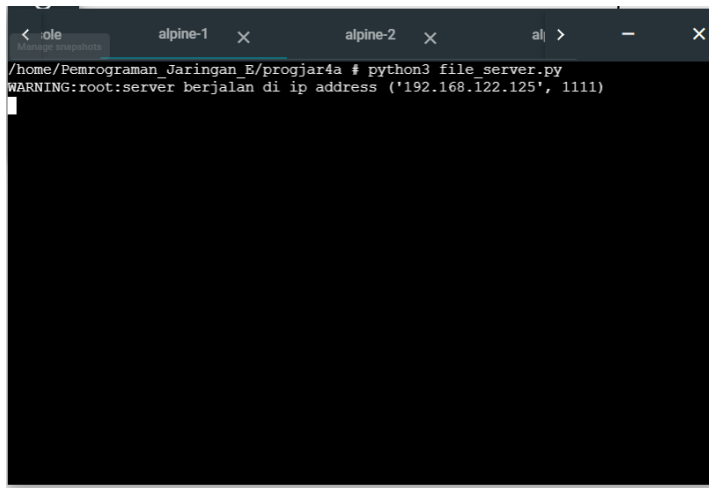


```
GNU nano 4.6 multi_process.py
from file_client_cli import remote_get
import time
import datetime
from multiprocessing import Process

def download_100x():
    texec = dict()
    urls = 'pokijan.jpg'
    catat_awal = datetime.datetime.now()
    for k in range(100):
        print(f"download ke {k}")
        waktu = time.time()
        #bagian ini merupakan bagian yang menginstruksikan eksekusi fungsi downl
        texec[k] = Process(target=remote_get, args=(urls,))
        texec[k].start()

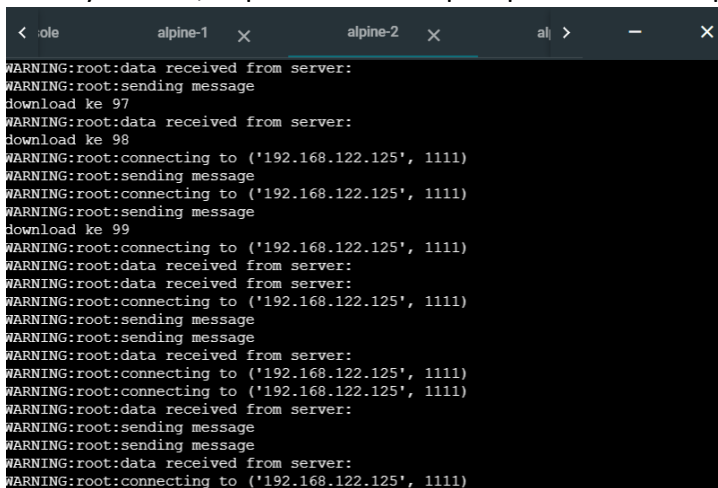
    #setelah menyelesaikan tugasnya, dikembalikan ke main process dengan join
    for k in range(100):
        texec[k].join()
    catat_akhir = datetime.datetime.now()
    selesai = catat_akhir - catat_awal
```

6. Pada server (alpine-1) jalankan **file_server.py**



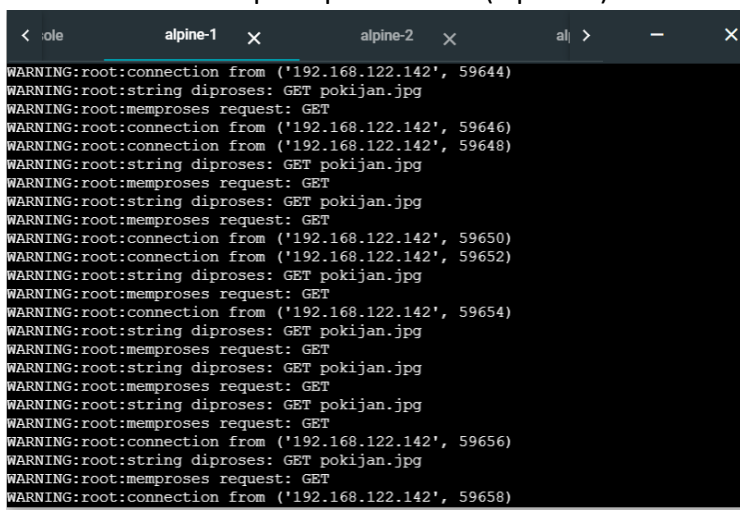
```
< ole alpine-1 alpine-2 alpine-3  
/home/Pemrograman Jaringan E/progjar4a # python3 file_server.py  
WARNING:root:server berjalan di ip address ('192.168.122.125', 1111)
```

7. Pada Client (alpine-2) jalankan **multi_process.py**, client akan menjalankan request sebanyak 100x, dapat dilihat setiap request dari 0 sampai 99



```
< ole alpine-1 alpine-2 alpine-3  
WARNING:root:data received from server:  
WARNING:root:sending message  
download ke 97  
WARNING:root:data received from server:  
download ke 98  
WARNING:root:connecting to ('192.168.122.125', 1111)  
WARNING:root:sending message  
WARNING:root:connecting to ('192.168.122.125', 1111)  
WARNING:root:sending message  
download ke 99  
WARNING:root:connecting to ('192.168.122.125', 1111)  
WARNING:root:data received from server:  
WARNING:root:data received from server:  
WARNING:root:connecting to ('192.168.122.125', 1111)  
WARNING:root:sending message  
WARNING:root:sending message  
WARNING:root:data received from server:  
WARNING:root:connecting to ('192.168.122.125', 1111)  
WARNING:root:connecting to ('192.168.122.125', 1111)  
WARNING:root:data received from server:  
WARNING:root:sending message  
WARNING:root:sending message  
WARNING:root:data received from server:  
WARNING:root:connecting to ('192.168.122.125', 1111)
```

8. Berikut adalah tampilan pada server (alpine-1)



```
< ole alpine-1 alpine-2 alpine-3  
WARNING:root:connection from ('192.168.122.142', 59644)  
WARNING:root:string diproses: GET pokijan.jpg  
WARNING:root:memproses request: GET  
WARNING:root:connection from ('192.168.122.142', 59646)  
WARNING:root:connection from ('192.168.122.142', 59648)  
WARNING:root:string diproses: GET pokijan.jpg  
WARNING:root:memproses request: GET  
WARNING:root:string diproses: GET pokijan.jpg  
WARNING:root:memproses request: GET  
WARNING:root:connection from ('192.168.122.142', 59650)  
WARNING:root:connection from ('192.168.122.142', 59652)  
WARNING:root:string diproses: GET pokijan.jpg  
WARNING:root:memproses request: GET  
WARNING:root:connection from ('192.168.122.142', 59654)  
WARNING:root:string diproses: GET pokijan.jpg  
WARNING:root:memproses request: GET  
WARNING:root:string diproses: GET pokijan.jpg  
WARNING:root:memproses request: GET  
WARNING:root:string diproses: GET pokijan.jpg  
WARNING:root:memproses request: GET  
WARNING:root:connection from ('192.168.122.142', 59656)  
WARNING:root:string diproses: GET pokijan.jpg  
WARNING:root:memproses request: GET  
WARNING:root:connection from ('192.168.122.142', 59658)
```