

TUGAS IMPLEMENTASI PROGRAM SERVER SESUAI CONTOH



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**Kelas:
Pemrograman Jaringan D**

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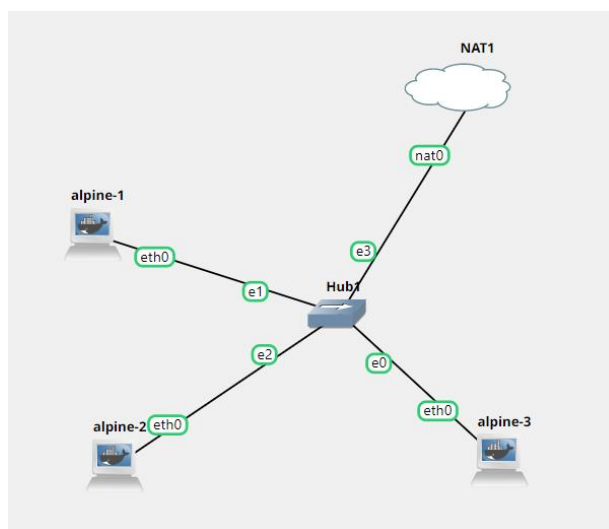
Soal

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

Jawaban

1. - Topologi yang digunakan



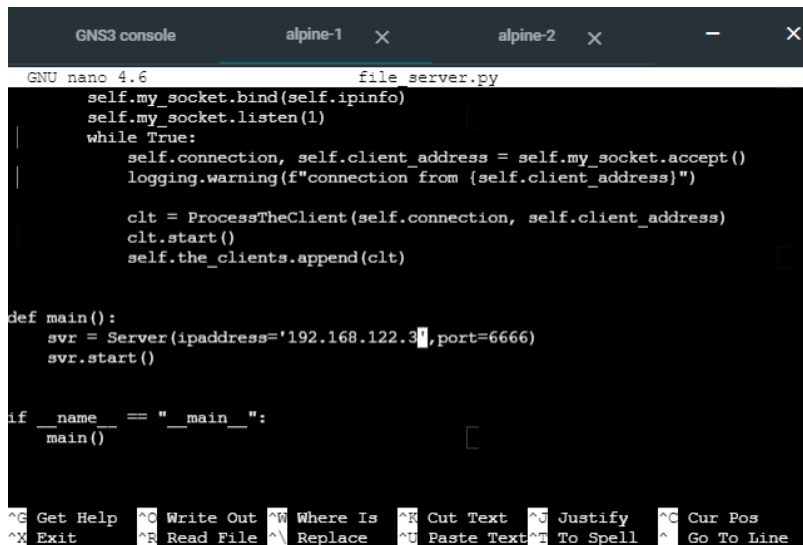
alpine-1 sebagai server, alpine-2 sebagai client, dan alpine 3 tidak digunakan

- Mengganti IP address pada file_server.py menjadi IP address pada alpine-1 dengan command nano file_server.py

```
GNS3 console  alpine-1  alpine-2  -  X
/home/work/Pemrograman_Jaringan_D/progjar4a # ifconfig
eth0      Link encap:Ethernet  HWaddr D6:60:89:FA:79:89
          inet addr:192.168.122.3  Bcast:192.168.122.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:14932 errors:0 dropped:0 overruns:0 frame:0
          TX packets:3159 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:16478079 (15.7 MiB)  TX bytes:175426 (171.3 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/work/Pemrograman_Jaringan_D/progjar4a #
```



```
GNU nano 4.6 file_server.py
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}")

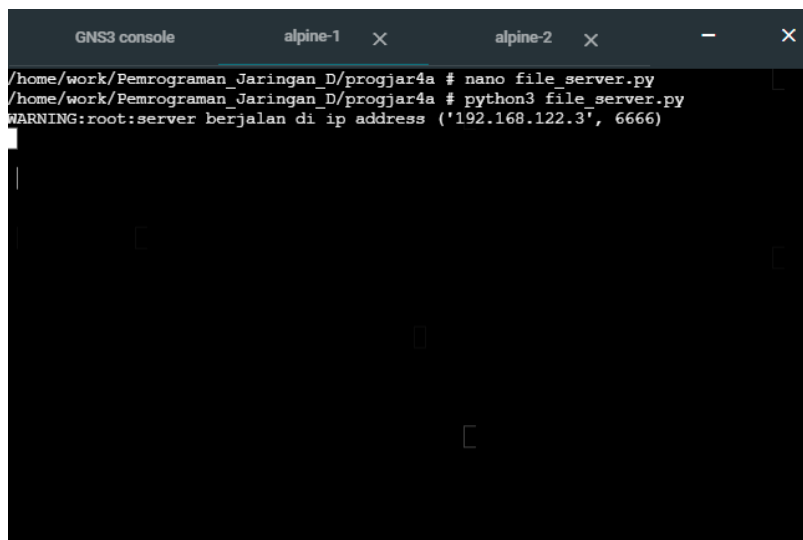
    clt = ProcessTheClient(self.connection, self.client_address)
    clt.start()
    self.the_clients.append(clt)

def main():
    svr = Server(ipaddress='192.168.122.3', port=6666)
    svr.start()

if __name__ == "__main__":
    main()

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

- Menjalankan file_server.py dengan command python3 file_server.py



```
/home/work/Pemrograman_Jaringan_D/progjar4a # nano file_server.py
/home/work/Pemrograman_Jaringan_D/progjar4a # python3 file_server.py
WARNING:root:server berjalan di ip address ('192.168.122.3', 6666)
```

2. - Membuat file baru untuk multi process yang dapat melakukan 100 request get dalam satu saat untuk operasi get file "pokijan.jpg"

```
GNS3 console      alpine-1  x      alpine-2  x      -      x
GNU nano 4.6      multi_process.py
from file_client_cli import remote_get
import time
import datetime
from multiprocessing import Process

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

[ Read 24 lines ]
^G Get Help      ^G 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
```

Disini saya menggunakan multi_process.py yang ada di directory progjar3 dan melakukan modifikasi pada file tersebut. Perubahan pertama yaitu pada line 1 untuk import library, disini saya melakukan import remote_get yang ada pada file_client_cli.py. Perubahan selanjutnya yaitu jumlah iterasi untuk download saya pasang menjadi 100 yaitu range(100) pada for loop dan mengubah memasang variable nama file yang akan di download yaitu "pokijan.jpg".

- Mengubah IP address pada file_client_cli.py sesuai dengan IP address server yaitu 192.168.122.3 (Port 6666) dengan command nano file_client_cli.py

```
GNS3 console      alpine-1  x      alpine-2  x      -      x
GNU nano 4.6      file_client_cli.py
import socket
import json
import base64
import logging

server_address=('192.168.122.3',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)
```

- Menjalankan multi_process.py pada alpine-2 dengan command python3 multi_process.py

```
GNS3 console  alpine-1  alpine-2  -  X
WARNING:root:sending message
WARNING:root:connecting to ('192.168.122.3', 6666)
WARNING:root:sending message
WARNING:root:data received from server:
WARNING:root:data received from server:
WARNING:root:connecting to ('192.168.122.3', 6666)
WARNING:root:sending message
WARNING:root:connecting to ('192.168.122.3', 6666)
WARNING:root:sending message
WARNING:root:data received from server:
WARNING:root:connecting to ('192.168.122.3', 6666)
WARNING:root:data received from server:
WARNING:root:sending message
WARNING:root:connecting to ('192.168.122.3', 6666)
WARNING:root:sending message
WARNING:root:data received from server:
WARNING:root:data received from server:
WARNING:root:data received from server:
WARNING:root:data received from server:
WARNING:root:data received from server:
WARNING:root:data received from server:
Waktu TOTAL yang dibutuhkan 0:00:03.329929 detik 2021-06-12 02:12:20.903002 s/d
2021-06-12 02:12:24.232931
```

- Message yang muncul pada alpine-1 (server) ketika menjalankan multi_process.py

```
GNS3 console  alpine-1  alpine-2  -  X
WARNING:root:memproses request: GET
WARNING:root:connection from ('192.168.122.187', 33252)
WARNING:root:connection from ('192.168.122.187', 33254)
WARNING:root:string diproses: GET pokijan.jpg
WARNING:root:memproses request: GET
WARNING:root:connection from ('192.168.122.187', 33256)
WARNING:root:connection from ('192.168.122.187', 33258)
WARNING:root:connection from ('192.168.122.187', 33260)
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:string diproses: GET pokijan.jpg
WARNING:root:memproses request: GET
WARNING:root:connection from ('192.168.122.187', 33262)
WARNING:root:connection from ('192.168.122.187', 33264)
WARNING:root:string diproses: GET pokijan.jpg
WARNING:root:memproses request: GET
WARNING:root:string diproses: GET pokijan.jpg
WARNING:root:memproses request: GET
```