

PEMROGRAMAN JARINGAN E
MENJALANKAN PROGRAM CHAT DI EMULATOR



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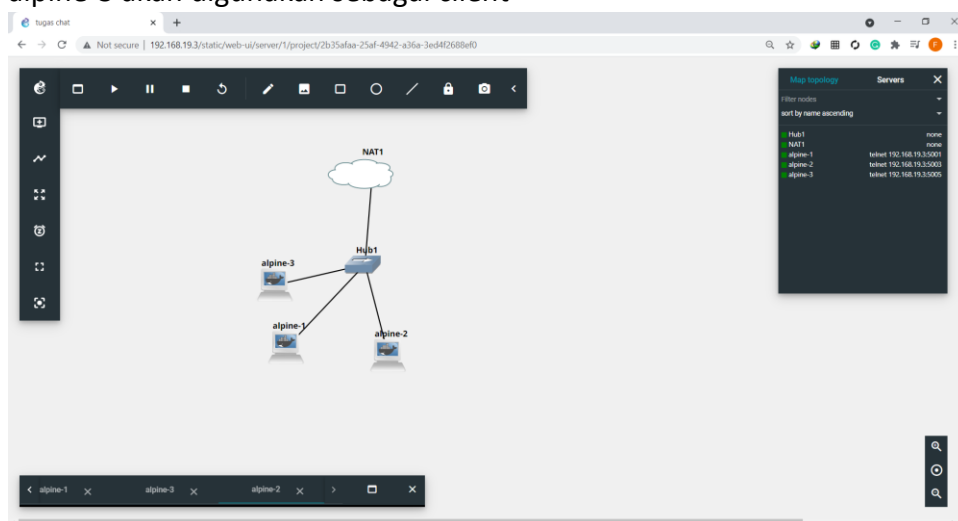
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Surabaya
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Praktikum

1. Jalankan program chat tersebut di EMULATOR. lakukan menggunakan konfigurasi
 - 1 mesin berfungsi sebagai chat server
 - 2 mesin berfungsi sebagai chat client
2. buatlah interaksi antara 2 mesin client dengan server. lakukan aktifitas-aktifitas berikut ini
 - authentication
 - berkirim pesan antar user
3. Capturelah ke dalam gambar, dan submitlah dalam bentuk 1 dokumen PDF. berikan PENJELASAN SINGKAT dari hasil capture anda

Dokumentasi :

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



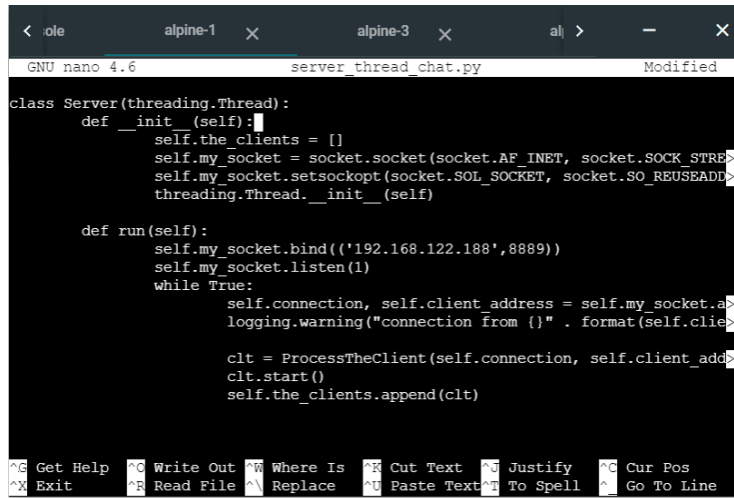
2. Cek ip pada server (alpine-1) dengan command **ifconfig**

```
home/Pemrograman_Jaringan_E/progjar4c # ifconfig
eth0: Link encap:Ethernet HWaddr 62:B9:D7:E6:CC:19
       inet addr:192.168.122.189 Bcast:192.168.122.255 Mask:255.255.255.0
       UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
       RX packets:12448 errors:0 dropped:0 overruns:0 frame:0
       TX packets:1991 errors:0 dropped:0 overruns:0 carrier:0
       collisions:0 txqueuelen:1000
       RX bytes:11861472 (11.3 MiB) TX bytes:112431 (109.7 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/progjar4c #
```

3. Konfigurasi pada file **server_thread_chat.py** dengan IP server (alpine-1)

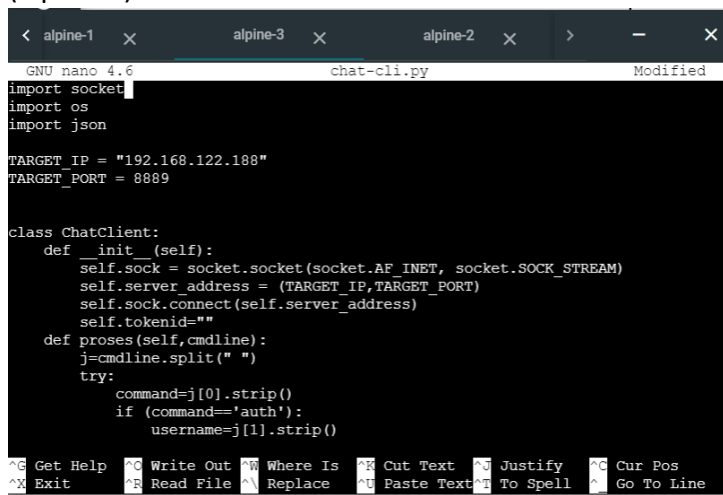


```
GNU nano 4.6 server_thread_chat.py Modified
class Server(threading.Thread):
    def __init__(self):
        self.the_clients = []
        self.my_socket = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
        self.my_socket.setsockopt(socket.SOL_SOCKET, socket.SO_REUSEADDR, 1)
        threading.Thread.__init__(self)

    def run(self):
        self.my_socket.bind(('192.168.122.188', 8889))
        self.my_socket.listen(1)
        while True:
            self.connection, self.client_address = self.my_socket.accept()
            logging.warning("connection from {}".format(self.client_address))

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

4. Konfigurasi pada file **chat-cli.py** pada client (alpine-2 dan alpine-3) dengan ip server (alpine-1)



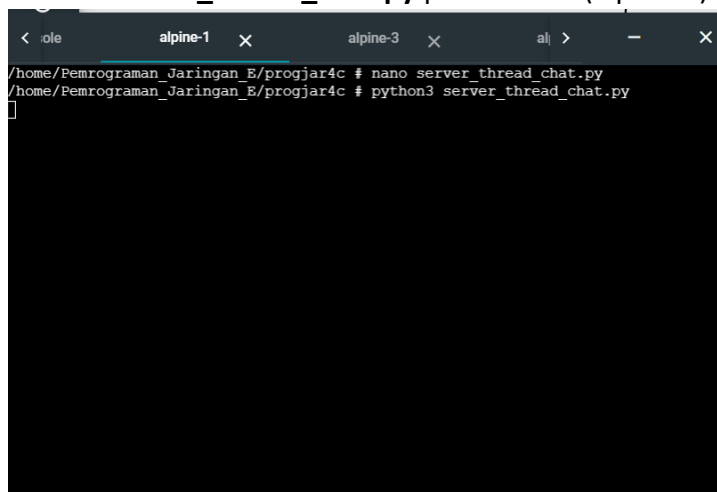
```
GNU nano 4.6 chat-cli.py Modified
import socket
import os
import json

TARGET_IP = "192.168.122.188"
TARGET_PORT = 8889

class ChatClient:
    def __init__(self):
        self.sock = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
        self.server_address = (TARGET_IP, TARGET_PORT)
        self.sock.connect(self.server_address)
        self.tokenid = ""

    def proses(self, cmdline):
        j = cmdline.split(" ")
        try:
            command = j[0].strip()
            if (command == 'auth'):
                username = j[1].strip()
```

5. Run file **server_thread_chat.py** pada server (alpine-1)



```
/home/Pemrograman_Jaringan_E/progjar4c # nano server_thread_chat.py
/home/Pemrograman_Jaringan_E/progjar4c # python3 server_thread_chat.py
```

6. Run file **chat-cli.py** pada client1 (alpine-2)

```
< alpine-1 x alpine-3 x alpine-2 x > - x
/home # cd Pemrograman_Jaringan_E/
/home/Pemrograman_Jaringan_E # ls
README.md progjar1a progjar3 progjar4b progjar5 progjar7
progjar1 progjar2 progjar4a progjar4c progjar6 progjar8
/home/Pemrograman_Jaringan_E # cd progjar4c
/home/Pemrograman_Jaringan_E/progjar4c # nano chat-cli.py
/home/Pemrograman_Jaringan_E/progjar4c # python3 chat-cli.py
Command :[]
```

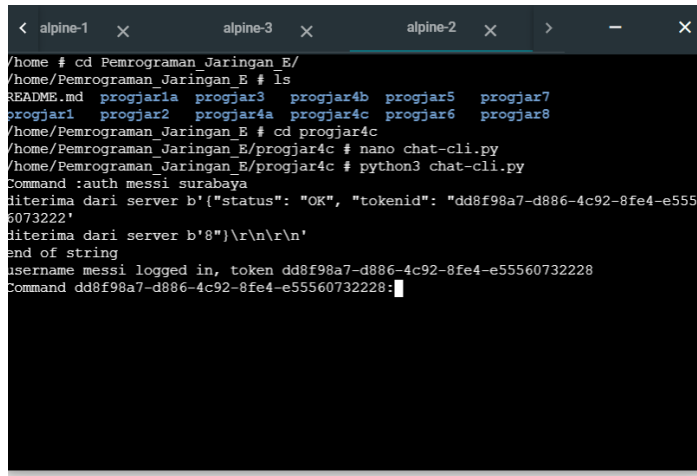
7. Run file **chat-cli.py** pada client2 (alpine-3)

```
< alpine-1 x alpine-3 x alpine-2 x > - x
/home # cd Pemrograman_Jaringan_E/
/home/Pemrograman_Jaringan_E # cd progjar4c
/home/Pemrograman_Jaringan_E/progjar4c # ls
chat-cli.py chat.py server_thread_chat.py
/home/Pemrograman_Jaringan_E/progjar4c # nano chat-cli.py
/home/Pemrograman_Jaringan_E/progjar4c # python3 chat-cli.py
Command :[]
```

8. Pada file **server_thread_chat.py** akan muncul apabila client berhasil connect

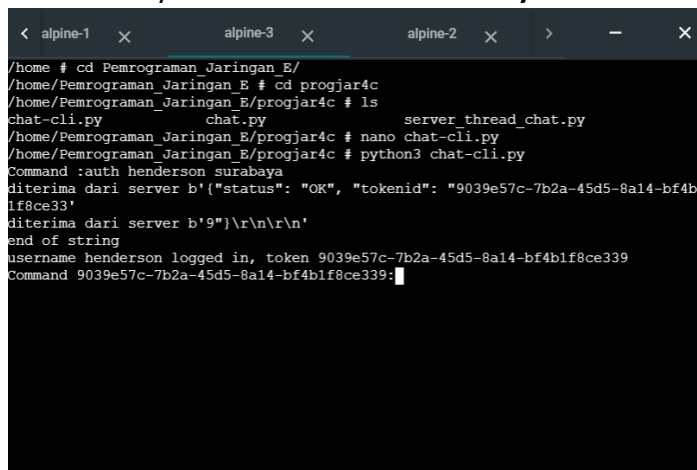
```
< .ole alpine-1 x alpine-3 x alpine-2 x > - x
/home/Pemrograman_Jaringan_E/progjar4c # nano server_thread_chat.py
/home/Pemrograman_Jaringan_E/progjar4c # python3 server_thread_chat.py
WARNING:root:connection from ('192.168.122.90', 50682)
WARNING:root:connection from ('192.168.122.145', 54046)
```

9. Lakukan Authentikasi pada client1 (alpine-2) dengan command "auth <username> <password>", disini kita login dengan messi, maka commandnya **"auth messi surabaya"**



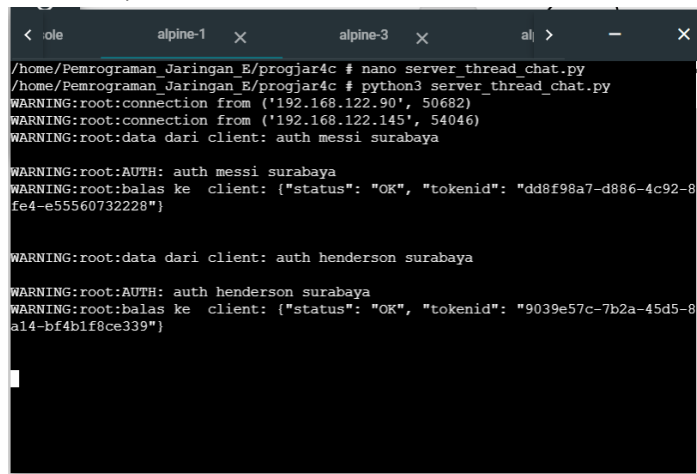
```
< alpine-1 x alpine-3 x alpine-2 x > - x
/home # cd Pemrograman_Jaringan_E/
/home/Pemrograman_Jaringan_E # ls
README.md progjar1a progjar3 progjar4b progjar5 progjar7
progjar1 progjar2 progjar4a progjar4c progjar6 progjar8
/home/Pemrograman_Jaringan_E # cd progjar4c
/home/Pemrograman_Jaringan_E/progjar4c # nano chat-cli.py
/home/Pemrograman_Jaringan_E/progjar4c # python3 chat-cli.py
Command :auth messi surabaya
diterima dari server b'{"status": "OK", "tokenId": "dd8f98a7-d886-4c92-8fe4-e55560732228"}\r\n\r\n'
end of string
username messi logged in, token dd8f98a7-d886-4c92-8fe4-e55560732228
Command dd8f98a7-d886-4c92-8fe4-e55560732228:
```

10. Lakukan Authentikasi pada client2 (alpine-3) disini kita login dengan Henderson, commandnya **"auth henderson Surabaya"**



```
< alpine-1 x alpine-3 x alpine-2 x > - x
/home # cd Pemrograman_Jaringan_E/
/home/Pemrograman_Jaringan_E # cd progjar4c
/home/Pemrograman_Jaringan_E/progjar4c # ls
chat-cli.py chat.py server_thread_chat.py
/home/Pemrograman_Jaringan_E/progjar4c # nano chat-cli.py
/home/Pemrograman_Jaringan_E/progjar4c # python3 chat-cli.py
Command :auth henderson surabaya
diterima dari server b'{"status": "OK", "tokenId": "9039e57c-7b2a-45d5-8a14-bf4b1f8ce339"}\r\n\r\n'
end of string
username henderson logged in, token 9039e57c-7b2a-45d5-8a14-bf4b1f8ce339
Command 9039e57c-7b2a-45d5-8a14-bf4b1f8ce339:
```

11. Pada server (alpine-1) akan muncul pemberitahuan, apabila berhasil akan muncul status ok, dan token-id



```
< .ole alpine-1 x alpine-3 x alpine-2 x > - x
/home/Pemrograman_Jaringan_E/progjar4c # nano server_thread_chat.py
/home/Pemrograman_Jaringan_E/progjar4c # python3 server_thread_chat.py
WARNING:root:connection from ('192.168.122.90', 50682)
WARNING:root:connection from ('192.168.122.145', 54046)
WARNING:root:data dari client: auth messi surabaya

WARNING:root:AUTH: auth messi surabaya
WARNING:root:balas ke client: {"status": "OK", "tokenId": "dd8f98a7-d886-4c92-8fe4-e55560732228"}

WARNING:root:data dari client: auth henderson surabaya

WARNING:root:AUTH: auth henderson surabaya
WARNING:root:balas ke client: {"status": "OK", "tokenId": "9039e57c-7b2a-45d5-8a14-bf4b1f8ce339"}


```

12. Pada Messi (client1/alpine-2) coba mengirim pesan ke Henderson dengan command **“send henderson halo”**, jika berhasil terkirim maka akan muncul status OK dan message sent

```
< alpine-1 x alpine-3 x alpine-2 x > - x
/home # cd Pemrograman_Jaringan_E/
/home/Pemrograman_Jaringan_E # ls
README.md progjar1a progjar3 progjar4b progjar5 progjar7
progjar1 progjar2 progjar4a progjar4c progjar6 progjar8
/home/Pemrograman_Jaringan_E # cd progjar4c
/home/Pemrograman_Jaringan_E/progjar4c # nano chat-cli.py
/home/Pemrograman_Jaringan_E/progjar4c # python3 chat-cli.py
Command :auth messi surabaya
diterima dari server b'{"status": "OK", "tokenid": "dd8f98a7-d886-4c92-8fe4-e55560732228"}\r\n\r\n'
diterima dari server b'8')\r\n\r\n'
end of string
username messi logged in, token dd8f98a7-d886-4c92-8fe4-e55560732228
Command dd8f98a7-d886-4c92-8fe4-e55560732228:send henderson halo
send dd8f98a7-d886-4c92-8fe4-e55560732228 henderson halo

diterima dari server b'{"status": "OK", "message": "Message Sent"}\r\n\r\n'
end of string
message sent to henderson
Command dd8f98a7-d886-4c92-8fe4-e55560732228:
```

13. Cek inbox pada Henderson (client2/alpine-3) dengan command **“inbox”** untuk mengecek pesan dari Messi

```
< alpine-1 x alpine-3 x alpine-2 x > - x
/home # cd Pemrograman_Jaringan_E/
/home/Pemrograman_Jaringan_E # cd progjar4c
/home/Pemrograman_Jaringan_E/progjar4c # ls
chat-cli.py chat.py server_thread_chat.py
/home/Pemrograman_Jaringan_E/progjar4c # nano chat-cli.py
/home/Pemrograman_Jaringan_E/progjar4c # python3 chat-cli.py
Command :auth henderson surabaya
diterima dari server b'{"status": "OK", "tokenid": "9039e57c-7b2a-45d5-8a14-bf4b1f8ce33"}\r\n\r\n'
diterima dari server b'9')\r\n\r\n'
end of string
username henderson logged in, token 9039e57c-7b2a-45d5-8a14-bf4b1f8ce339
Command 9039e57c-7b2a-45d5-8a14-bf4b1f8ce339:inbox
diterima dari server b'{"status": "OK", "messages": [{"messi": [{"msg_from": "Lionel Messi", "msg_to": "Jordan Henderson", "msg": " halo \r\n\r\n"}]}\r\n\r\n'
diterima dari server b'si", "msg_to": "Jordan Henderson", "msg": " halo \r\n\r\n"}]}\r\n\r\n'
end of string
{"messi": [{"msg_from": "Lionel Messi", "msg_to": "Jordan Henderson", "msg": " halo \r\n\r\n"}]}
Command 9039e57c-7b2a-45d5-8a14-bf4b1f8ce339:
```

14. Sekarang coba kirim pesan dari Henderson (client2/alpine-3) ke Messi (client1/alpine-2) dengan command **“send messi halo juga”**

```
< alpine-1 x alpine-3 x alpine-2 x > - x
/home/Pemrograman_Jaringan_E/progjar4c # ls
chat-cli.py chat.py server_thread_chat.py
/home/Pemrograman_Jaringan_E/progjar4c # nano chat-cli.py
/home/Pemrograman_Jaringan_E/progjar4c # python3 chat-cli.py
Command :auth henderson surabaya
diterima dari server b'{"status": "OK", "tokenid": "9039e57c-7b2a-45d5-8a14-bf4b1f8ce33"}\r\n\r\n'
diterima dari server b'9')\r\n\r\n'
end of string
username henderson logged in, token 9039e57c-7b2a-45d5-8a14-bf4b1f8ce339
Command 9039e57c-7b2a-45d5-8a14-bf4b1f8ce339:inbox
diterima dari server b'{"status": "OK", "messages": [{"messi": [{"msg_from": "Lionel Messi", "msg_to": "Jordan Henderson", "msg": " halo \r\n\r\n"}]}\r\n\r\n'
diterima dari server b'si", "msg_to": "Jordan Henderson", "msg": " halo \r\n\r\n"}]}\r\n\r\n'
end of string
{"messi": [{"msg_from": "Lionel Messi", "msg_to": "Jordan Henderson", "msg": " halo \r\n\r\n"}]}
Command 9039e57c-7b2a-45d5-8a14-bf4b1f8ce339:send messi halo juga
send 9039e57c-7b2a-45d5-8a14-bf4b1f8ce339 messi halo juga

diterima dari server b'{"status": "OK", "message": "Message Sent"}\r\n\r\n'
end of string
message sent to messi
```

15. Cek inbox pada Messi (client1/alpine-2) dengan command **"inbox"** untuk mengecek pesan dari Henderson (client2/alpine-3)

```
< alpine-1 x alpine-3 x alpine-2 x > - x
/home/Pemrograman_Jaringan_E # cd progjar4c
/home/Pemrograman_Jaringan_E/progjar4c # nano chat-cli.py
/home/Pemrograman_Jaringan_E/progjar4c # python3 chat-cli.py
Command :auth messi surabaya
diterima dari server b'{"status": "OK", "tokenid": "dd8f98a7-d886-4c92-8fe4-e55560732228"}\r\n\r\n'
end of string
username messi logged in, token dd8f98a7-d886-4c92-8fe4-e55560732228
Command dd8f98a7-d886-4c92-8fe4-e55560732228:send henderson halo
send dd8f98a7-d886-4c92-8fe4-e55560732228 henderson halo

diterima dari server b'{"status": "OK", "message": "Message Sent"}\r\n\r\n'
end of string
message sent to henderson
Command dd8f98a7-d886-4c92-8fe4-e55560732228:inbox
diterima dari server b'{"status": "OK", "messages": {"henderson": [{"msg_from": "Jordan", "msg_to": "Lionel Messi", "msg": " halo juga"}]}}\r\n\r\n'
end of string
{"henderson": [{"msg_from": "Jordan Henderson", "msg_to": "Lionel Messi", "msg": " halo juga"}]}
```

16. Seluruh percakapan dan aktivitas antar client mulai dari login hingga mengirim pesan akan tercatat pada server (alpine-1)

```
< ole alpine-1 x alpine-3 x alpine-2 x > - x
WARNING:root:data dari client: inbox 9039e57c-7b2a-45d5-8a14-bf4b1f8ce339
WARNING:root:INBOX: 9039e57c-7b2a-45d5-8a14-bf4b1f8ce339
WARNING:root:balas ke client: {"status": "OK", "messages": {"messi": [{"msg_from": "Lionel Messi", "msg_to": "Jordan Henderson", "msg": " halo"}]}}
WARNING:root:data dari client: send 9039e57c-7b2a-45d5-8a14-bf4b1f8ce339 messi halo juga
WARNING:root:SEND: session 9039e57c-7b2a-45d5-8a14-bf4b1f8ce339 send message from henderson to messi
WARNING:root:balas ke client: {"status": "OK", "message": "Message Sent"}
WARNING:root:data dari client: inbox dd8f98a7-d886-4c92-8fe4-e55560732228
WARNING:root:INBOX: dd8f98a7-d886-4c92-8fe4-e55560732228
WARNING:root:balas ke client: {"status": "OK", "messages": {"henderson": [{"msg_from": "Jordan Henderson", "msg_to": "Lionel Messi", "msg": " halo juga"}]}}
```