

# **Tugas Menjalankan Program Chat di Emulator**

## **Pemrograman Jaringan**



**Kelas E**

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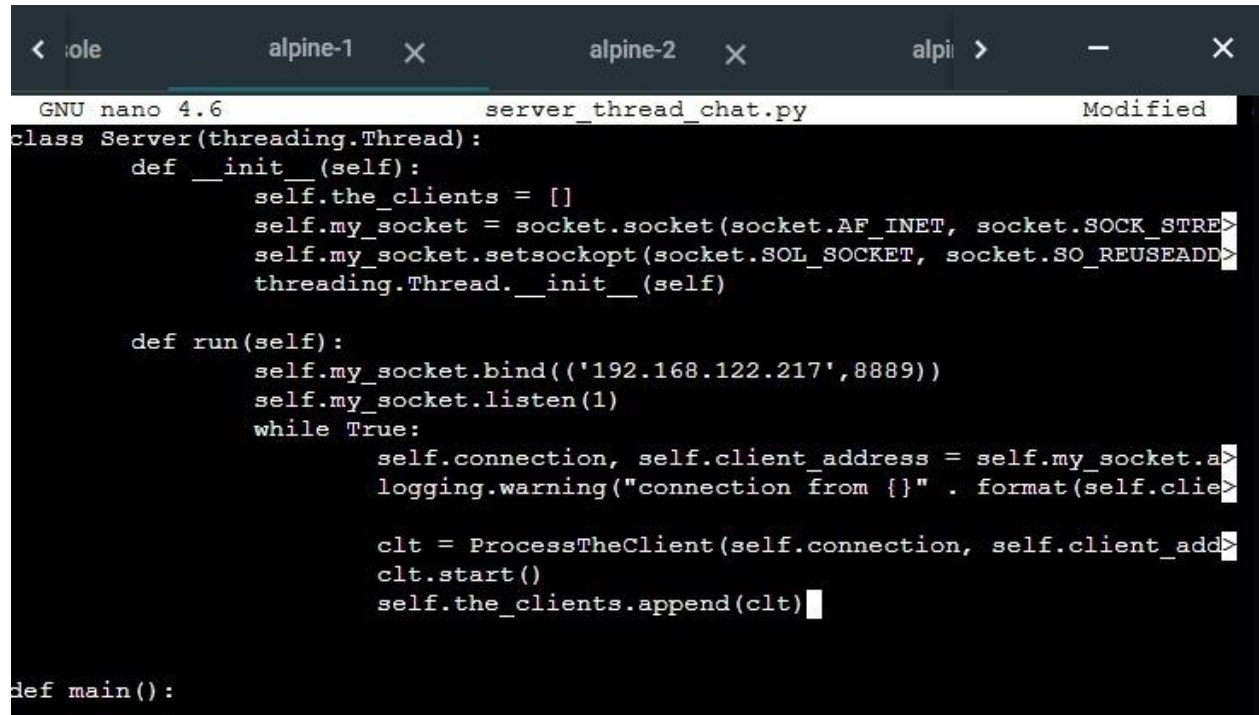
NRP : 05111840000106

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## Menyambungkan client ke server

1. Ganti IP address menjadi IP address server pada file server\_thread\_chat.py untuk server (alpine-1)



The screenshot shows a terminal window with three tabs: 'alpine-1', 'alpine-2', and 'alpi'. The 'alpine-1' tab is active, and the file 'server\_thread\_chat.py' is open in the GNU nano 4.6 editor. The code defines a 'Server' class that inherits from 'threading.Thread'. The '\_\_init\_\_' method initializes 'self.the\_clients' as an empty list, 'self.my\_socket' as a socket object, and sets socket options. The 'run' method binds the socket to '192.168.122.217' on port 8889, listens for connections, and in a loop, accepts connections, logs the client address, creates a 'ProcessTheClient' object, starts it, and appends it to 'self.the\_clients'. A 'main' function is also defined.

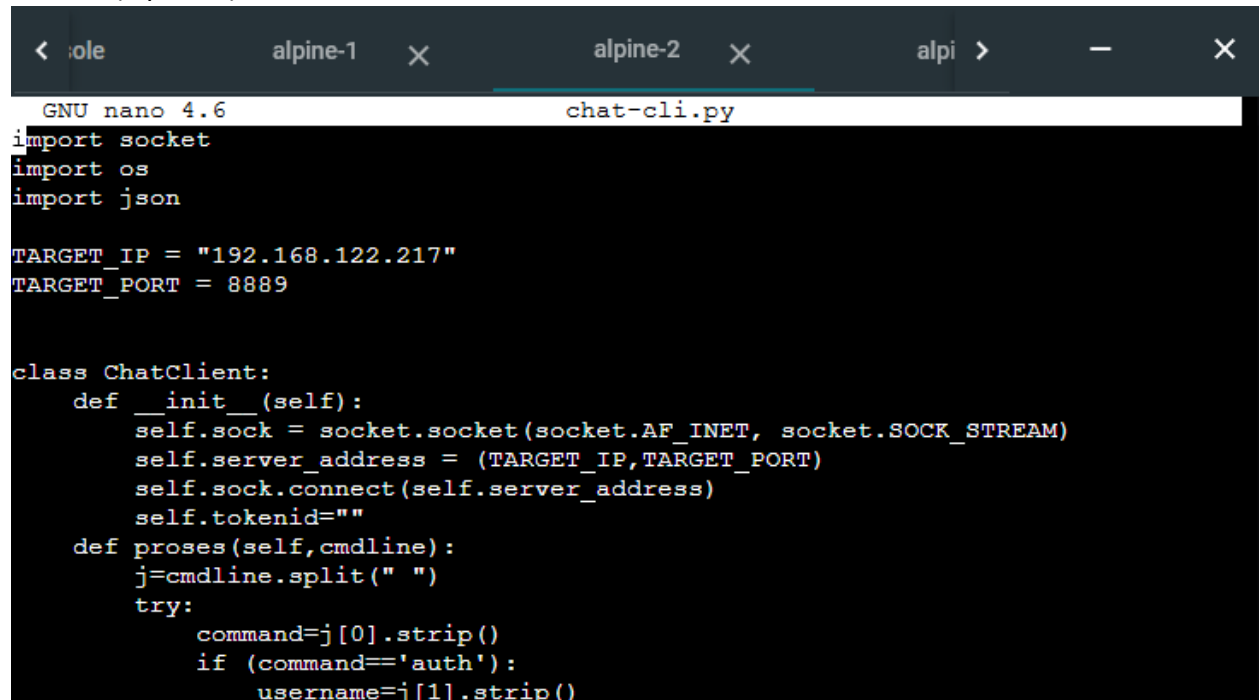
```
GNU nano 4.6 server_thread_chat.py Modified
class Server(threading.Thread):
    def __init__(self):
        self.the_clients = []
        self.my_socket = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
        self.my_socket.setsockopt(socket.SOL_SOCKET, socket.SO_REUSEADDR, 1)
        threading.Thread.__init__(self)

    def run(self):
        self.my_socket.bind(('192.168.122.217', 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)

def main():
```

2. Ganti IP address menjadi IP address server (alpine-1) pada file chat-cli.py untuk client 1 (alpine-2)



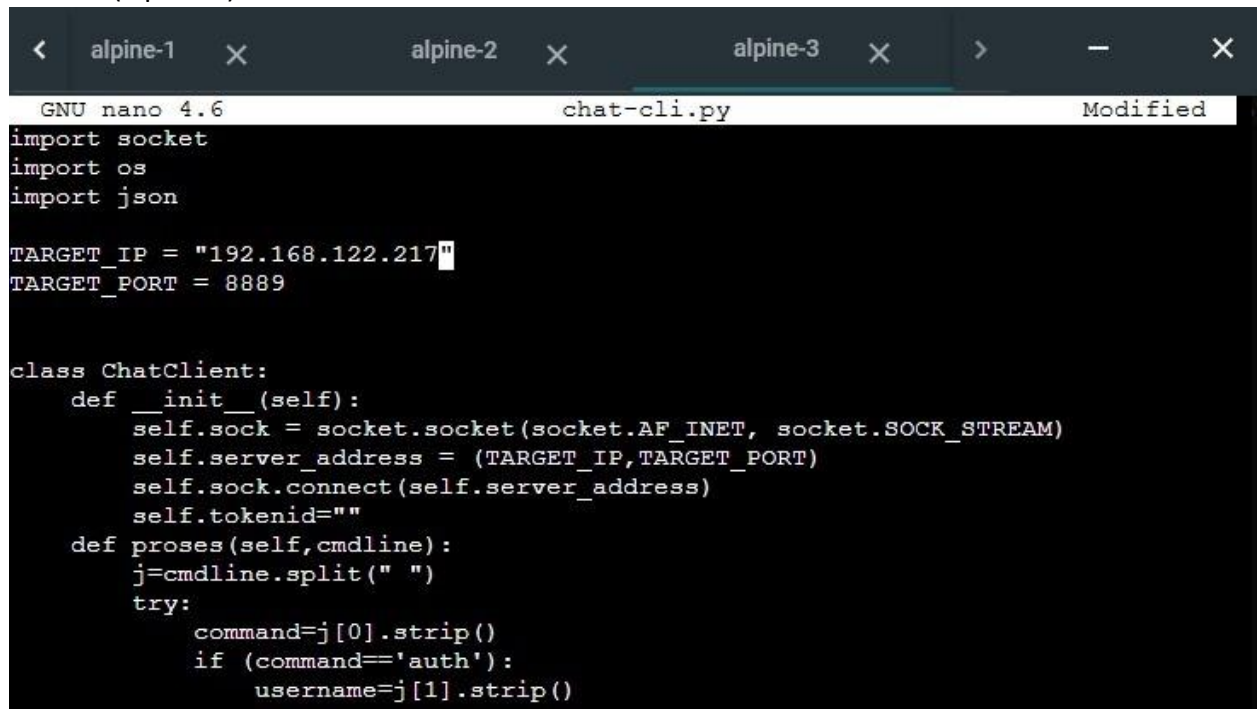
The screenshot shows the same terminal window with the 'alpine-2' tab active. The file 'chat-cli.py' is open in the GNU nano 4.6 editor. The code imports 'socket', 'os', and 'json'. It defines 'TARGET\_IP' as '192.168.122.217' and 'TARGET\_PORT' as 8889. A 'ChatClient' class is defined with an '\_\_init\_\_' method that creates a socket, connects to the target IP and port, and sets 'self.tokenid' to an empty string. The 'proses' method splits a command line and processes the 'auth' command to extract a username.

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

TARGET_IP = "192.168.122.217"
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()
```

3. Ganti IP address menjadi IP address server (alpine-1) pada file chat-cli.py untuk client 2 (alpine-3)



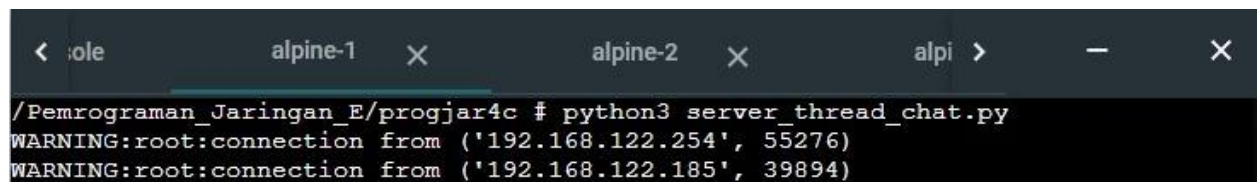
The screenshot shows a terminal window with three tabs: alpine-1, alpine-2, and alpine-3. The alpine-3 tab is active, showing the nano 4.6 editor editing the file chat-cli.py. The code in the file is as follows:

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

TARGET_IP = "192.168.122.217"
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()
```

4. Server (alpine-1) menunjukkan client (alpine-2 dan alpine-3) berhasil tersambung ke server.

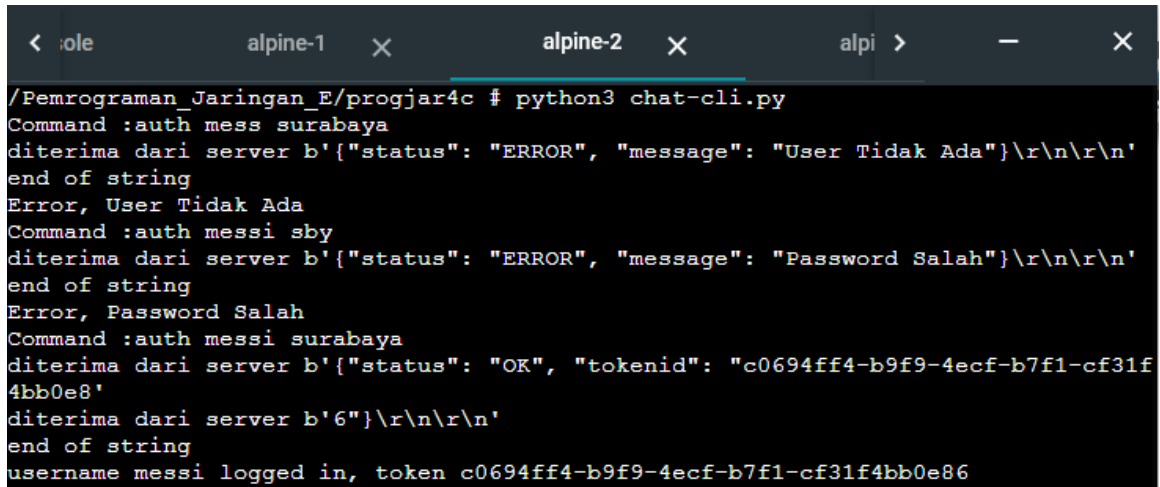


The screenshot shows a terminal window with three tabs: alpine-1, alpine-2, and alpine-3. The alpine-1 tab is active, showing the output of the python3 server\_thread\_chat.py command. The output is as follows:

```
/Pemrograman_Jaringan_E/progjar4c # python3 server_thread_chat.py
WARNING:root:connection from ('192.168.122.254', 55276)
WARNING:root:connection from ('192.168.122.185', 39894)
```

## Autentifikasi

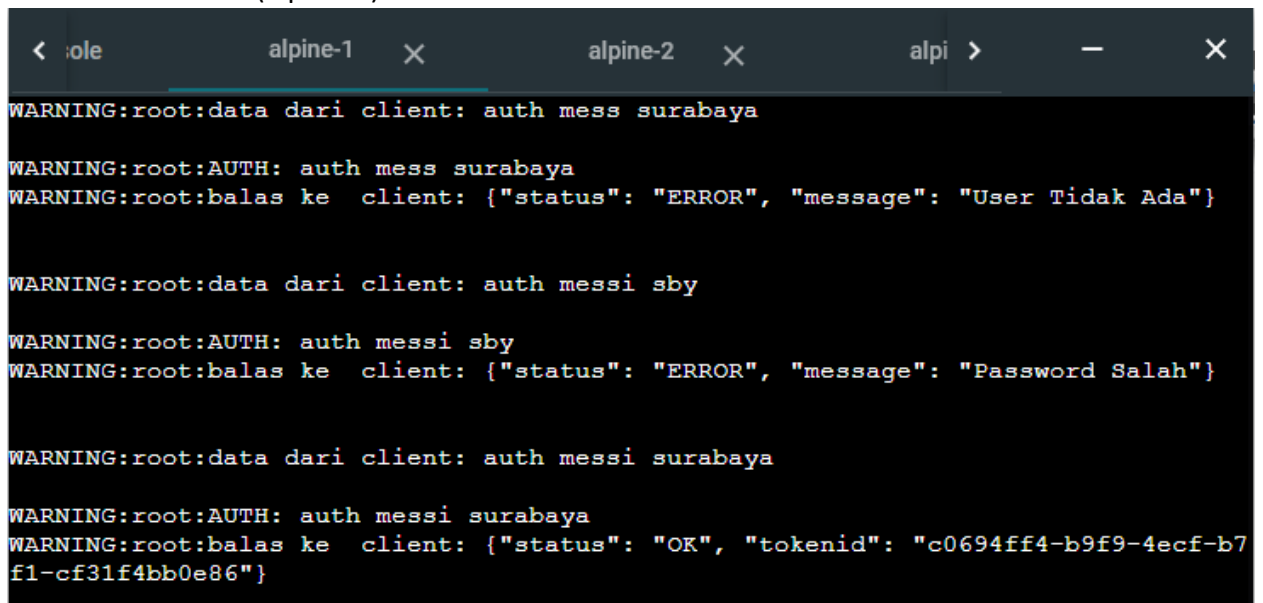
1. Pada client 1 (alpine-2) coba jalankan 'auth mess surabaya', 'auth messi sby' dan 'auth messi surabaya'



```
< role alpine-1 x alpine-2 x alpi > - x
/Pemrograman_Jaringan_E/progjar4c # python3 chat-cli.py
Command :auth mess surabaya
diterima dari server b'{"status": "ERROR", "message": "User Tidak Ada"}\r\n\r\n'
end of string
Error, User Tidak Ada
Command :auth messi sby
diterima dari server b'{"status": "ERROR", "message": "Password Salah"}\r\n\r\n'
end of string
Error, Password Salah
Command :auth messi surabaya
diterima dari server b'{"status": "OK", "tokenid": "c0694ff4-b9f9-4ecf-b7f1-cf31f4bb0e86"}\r\n\r\n'
diterima dari server b'6"}\r\n\r\n'
end of string
username messi logged in, token c0694ff4-b9f9-4ecf-b7f1-cf31f4bb0e86
```

Hasilnya, command pertama dan kedua mendapat error message karena tidak sesuai dengan data sedangkan untuk command ketiga, user berhasil diautentikasi karena sesuai dengan data yang ada.

Rekaman di server (alpine-1)



```
< role alpine-1 x alpine-2 x alpi > - x
WARNING:root:data dari client: auth mess surabaya
WARNING:root:AUTH: auth mess surabaya
WARNING:root:balas ke client: {"status": "ERROR", "message": "User Tidak Ada"}

WARNING:root:data dari client: auth messi sby
WARNING:root:AUTH: auth messi sby
WARNING:root:balas ke client: {"status": "ERROR", "message": "Password Salah"}

WARNING:root:data dari client: auth messi surabaya
WARNING:root:AUTH: auth messi surabaya
WARNING:root:balas ke client: {"status": "OK", "tokenid": "c0694ff4-b9f9-4ecf-b7f1-cf31f4bb0e86"}
```

2. Pada client 2 (alpine-3) coba jalankan 'auth henderson surabaya', 'auth henderson sby' dan 'auth henderson surabaya'

```
< alpine-1 x alpine-2 x alpine-3 x > - x
/Pemrograman_Jaringan_E/progjar4c # python3 chat-cli.py
Command :auth henderson surabaya
diterima dari server b'{"status": "ERROR", "message": "User Tidak Ada"}\r\n\r\n'
end of string
Error, User Tidak Ada
Command :auth henderson sby
diterima dari server b'{"status": "ERROR", "message": "Password Salah"}\r\n\r\n'
end of string
Error, Password Salah
Command :auth henderson surabaya
diterima dari server b'{"status": "OK", "tokenid": "442928d2-d3df-4434-8e77-ec0ea2816875"}\r\n\r\n'
diterima dari server b'5"}\r\n\r\n'
end of string
username henderson logged in, token 442928d2-d3df-4434-8e77-ec0ea2816875
```

Hasilnya, command pertama dan kedua mendapat error message karena tidak sesuai dengan data sedangkan untuk command ketiga, user berhasil diautentikasi karena sesuai dengan data yang ada.

Rekaman di server (alpine-1)

```
< role alpine-1 x alpine-2 x alpi > - x
WARNING:root:data dari client: auth henderson surabaya
WARNING:root:AUTH: auth henderson surabaya
WARNING:root:balas ke client: {"status": "ERROR", "message": "User Tidak Ada"}

WARNING:root:data dari client: auth henderson sby
WARNING:root:AUTH: auth henderson sby
WARNING:root:balas ke client: {"status": "ERROR", "message": "Password Salah"}

WARNING:root:data dari client: auth henderson surabaya
WARNING:root:AUTH: auth henderson surabaya
WARNING:root:balas ke client: {"status": "OK", "tokenid": "442928d2-d3df-4434-8e77-ec0ea2816875"}
```

## Berkirim Pesan antar User

1. Pada client 1 (alpine-2) jalankan 'send henderson Tes kirim pesan.', pesan akan terkirim untuk user yang memiliki nama henderson.

```
< role alpine-1 x alpine-2 x alpi > - x
Command c0694ff4-b9f9-4ecf-b7f1-cf31f4bb0e86:send henderson Tes kirim pesan.
send c0694ff4-b9f9-4ecf-b7f1-cf31f4bb0e86 henderson Tes kirim pesan.

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

2. Client 2 (alpine-3) memiliki user dengan nama henderson. Untuk mengecek apakah pesan dari client 1 masuk ke client 2, jalankan 'inbox'

```
< alpine-1 x alpine-2 x alpine-3 x > - x
Command 442928d2-d3df-4434-8e77-ec0ea2816875:inbox
diterima dari server b'{"status": "OK", "messages": {"messi": [{"msg_from": "Lionel Messi", "msg_to": "Jordan Henderson", "msg": "Tes kirim pesan."}]}
diterima dari server b'{"status": "OK", "messages": {"messi": [{"msg_from": "Lionel Messi", "msg_to": "Jordan Henderson", "msg": "Tes kirim pesan."}]}
diterima dari server b'{"status": "OK", "messages": {"messi": [{"msg_from": "Lionel Messi", "msg_to": "Jordan Henderson", "msg": "Tes kirim pesan."}]}
end of string
{"messi": [{"msg_from": "Lionel Messi", "msg_to": "Jordan Henderson", "msg": "Tes kirim pesan."}]}
end of string
```

3. Balas pesan client 1 (alpine-2) dengan menjalankan 'send messi Pesan diterima!' menggunakan client 2 (alpine-3).

```
< alpine-1 x alpine-2 x alpine-3 x > - x
Command 442928d2-d3df-4434-8e77-ec0ea2816875:send messi Pesan diterima!
send 442928d2-d3df-4434-8e77-ec0ea2816875 messi Pesan diterima!

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

- ```

Command c0694ff4-b9f9-4ecf-b7f1-cf31f4bb0e86:inbox
diterima dari server b'{"status": "OK", "messages": {"henderson": [{"msg_from": "Jordan'
diterima dari server b' Henderson", "msg_to": "Lionel Messi", "msg": "  Pesan dit
erima!'
diterima dari server b' \\r\\n"}]]}\\r\\n\\r\\n'
end of string
{"henderson": [{"msg_from": "Jordan Henderson", "msg_to": "Lionel Messi", "msg":
"  Pesan diterima! \\r\\n"}]}

```

- ```
< role alpine-1 x alpine-2 x alpi > - x
WARNING:root:data dari client: send c0694ff4-b9f9-4ecf-b7f1-cf31f4bb0e86 henderson
n Tes kirim pesan.

WARNING:root:SEND: session c0694ff4-b9f9-4ecf-b7f1-cf31f4bb0e86 send message from
messi to henderson
WARNING:root:balas ke client: {"status": "OK", "message": "Message Sent"}

WARNING:root:data dari client: inbox 442928d2-d3df-4434-8e77-ec0ea2816875

WARNING:root:INBOX: 442928d2-d3df-4434-8e77-ec0ea2816875
WARNING:root:balas ke client: {"status": "OK", "messages": {"messi": [{"msg_from
": "Lionel Messi", "msg_to": "Jordan Henderson", "msg": " Tes kirim pesan. \r\n"
}]]}}

WARNING:root:data dari client: send 442928d2-d3df-4434-8e77-ec0ea2816875 messi P
esan diterima!

WARNING:root:SEND: session 442928d2-d3df-4434-8e77-ec0ea2816875 send message from
henderson to messi
WARNING:root:balas ke client: {"status": "OK", "message": "Message Sent"}

WARNING:root:data dari client: inbox c0694ff4-b9f9-4ecf-b7f1-cf31f4bb0e86

< role alpine-1 x alpine-2 x alpi > - x
WARNING:root:balas ke client: {"status": "OK", "messages": {"henderson": [{"msg_
from": "Jordan Henderson", "msg_to": "Lionel Messi", "msg": " Pesan diterima! \r
\n"}]]}}
```