

Tugas Chat Protocol



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Pemrograman Jaringan - D

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S1 TEKNIK INFORMATIKA

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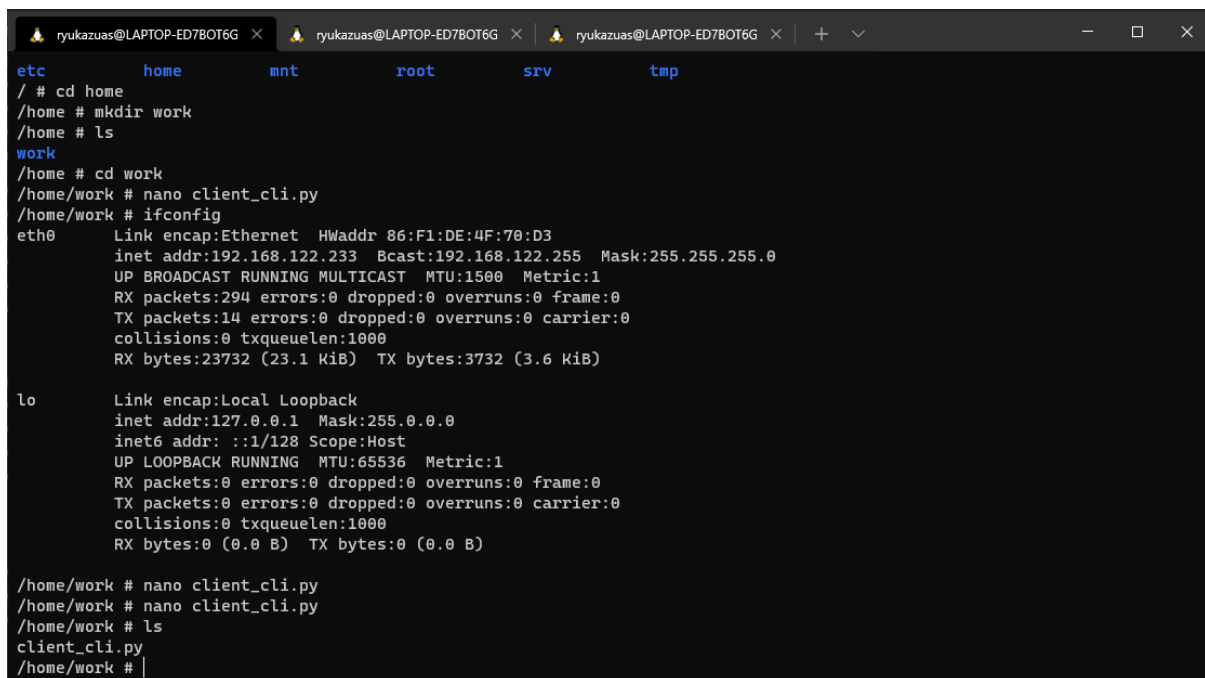
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Tugas

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

Jawab

1. Set alpine 1 dan alpine 2 sebagai client dan alpine 3 sebagai server.
2. Mengedit file chat-cli.py pada folder progjar4c dan arahkan "TARGET_IP" ke IP Address Alpine 3 (server). Lalu masukkan file chat-cli.py pada alpine 1 dan alpine 2 karena alpine tersebut akan kita jadikan sebagai client.



```
etc      home      mnt      root      srv      tmp
/ # cd home
/home # mkdir work
/home # ls
work
/home # cd work
/home/work # nano client_cli.py
/home/work # ifconfig
eth0      Link encap:Ethernet  HWaddr 86:F1:DE:4F:70:D3
          inet addr:192.168.122.233  Bcast:192.168.122.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:294 errors:0 dropped:0 overruns:0 frame:0
          TX packets:14 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:23732 (23.1 KiB)  TX bytes:3732 (3.6 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 # nano client_cli.py
/home/work # nano client_cli.py
/home/work # ls
client_cli.py
/home/work # |
```

```
ryukazuas@LAPTOP-ED7BOT6G x ryukazuas@LAPTOP-ED7BOT6G x ryukazuas@LAPTOP-ED7BOT6G x + v - □ x
inet addr:192.168.122.110 Bcast:192.168.122.255 Mask:255.255.255.0
UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
RX packets:300 errors:0 dropped:1 overruns:0 frame:0
TX packets:14 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:1000
RX bytes:24380 (23.8 KiB) TX bytes:3732 (3.6 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)

/ # mkdir home/work
/ # ls
bin      gns3      lib      opt      run      super    usr
dev      gns3volumes media    proc     sbin     sys      var
etc      home     mnt      root     srv      tmp
/ # cd home
/home # ls
work
/home # cd work
/home/work # nano client_cli.py
/home/work # nano client_cli.py
/home/work # ls
client_cli.py
/home/work # |
```

3. Mengedit file `server_thread_chat.py` pada folder `progjar4c` dan arahkan “TARGET_IP” ke IP Address Alpine 3 (server). Lalu masukkan file `server_thread_chat.py` dan `chat.py` pada alpine 3 karena alpine tersebut akan kita jadikan sebagai server.

```
ryukazuas@LAPTOP-ED7BOT6G x ryukazuas@LAPTOP-ED7BOT6G x ryukazuas@LAPTOP-ED7BOT6G x + v - □ x
Sending discover...
Sending discover...
udhcpd failed to get a DHCP lease
No lease, forking to background
ok
/ # ifconfig
eth0    Link encap:Ethernet HWaddr 1E:B4:F1:05:68:FB
      inet addr:192.168.122.155 Bcast:192.168.122.255 Mask:255.255.255.0
      UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
      RX packets:296 errors:0 dropped:0 overruns:0 frame:0
      TX packets:13 errors:0 dropped:0 overruns:0 carrier:0
      collisions:0 txqueuelen:1000
      RX bytes:23508 (22.9 KiB) TX bytes:3642 (3.5 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)

/ # mkdir home/work
/ # cd home/work
/home/work # nano server_thread_chat.py
/home/work # nano chat.py
/home/work # ls
chat.py      server_thread_chat.py
/home/work # |
```

4. Menjalankan file `server_thread_chat.py` dan `chat.py` pada alpine 3 diikuti dengan menjalankan file `chat_cli.py` yang pada terminal tertulis sebagai `client_cli.py`. Kemudian lakukan authentication pada command dengan sintaks : `auth <username> <password>`. Dalam

case ini juga disertakan bagaimana jika password yang dimasukkan merupakan password yang salah.

NB : username dan password terdapat pada file chat.py

```
lock.acquire()
KeyboardInterrupt:
/home/work # python3 chat.py
WARNING:root:AUTH: auth messi surabaya
{'status': 'OK', 'tokenId': '6a6f58e8-1802-4aaf-b31d-d0a94e8b3798'}
WARNING:root:SEND: session 6a6f58e8-1802-4aaf-b31d-d0a94e8b3798 send message from messi to henderson
{'status': 'OK', 'message': 'Message Sent'}
WARNING:root:SEND: session 6a6f58e8-1802-4aaf-b31d-d0a94e8b3798 send message from messi to messi
{'status': 'OK', 'message': 'Message Sent'}
isi mailbox dari messi
{'status': 'OK', 'messages': {'messi': [{'msg_from': 'Lionel Messi', 'msg_to': 'Lionel Messi', 'msg': ' hello gimana kabarnya mess '}]}}
isi mailbox dari henderson
{'status': 'OK', 'messages': {'messi': [{'msg_from': 'Lionel Messi', 'msg_to': 'Jordan Henderson', 'msg': ' hello gimana kabarnya son '}]}}
/home/work # python3 server_thread_chat.py
```

```
/home/work # nano client_cli.py
/home/work # nano client_cli.py
/home/work # ls
client_cli.py
/home/work # python3 client_cli.py
Traceback (most recent call last):
  File "client_cli.py", line 81, in <module>
    cc = ChatClient()
  File "client_cli.py", line 13, in __init__
    self.sock.connect(self.server_address)
ConnectionRefusedError: [Errno 111] Connection refused
/home/work # nano client_cli.py
/home/work # python3 client_cli.py
Traceback (most recent call last):
  File "client_cli.py", line 81, in <module>
    cc = ChatClient()
  File "client_cli.py", line 13, in __init__
    self.sock.connect(self.server_address)
ConnectionRefusedError: [Errno 111] Connection refused
/home/work # python3 client_cli.py
Command :auth messi surabaya
diterima dari server b'{"status": "ERROR", "message": "Password Salah"}\n\r\n'
end of string
Error, Password Salah
Command :auth messi surabaya
diterima dari server b'{"status": "OK", "tokenId": "48aa23ce-a203-441a-98c6-92429b73a26"'
diterima dari server b'a"}\n\r\n'
end of string
username messi logged in, token 48aa23ce-a203-441a-98c6-92429b73a26a
Command 48aa23ce-a203-441a-98c6-92429b73a26a:
```

```
ryukazuas@LAPTOP-ED7BOT6G x ryukazuas@LAPTOP-ED7BOT6G x ryukazuas@LAPTOP-ED7BOT6G x + v - □ x
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)

/ # mkdir home/work
/ # ls
bin      gns3      lib      opt      run      super    usr
dev      gns3volumes media    proc     sbin     sys      var
etc      home      mnt      root     srv      tmp
/ # cd home
/home # ls
work
/home # cd work
/home/work # nano client_cli.py
/home/work # nano client_cli.py
/home/work # ls
client_cli.py
/home/work # python3 client_cli.py
Command :auth henderson surabaya
diterima dari server b'{"status": "OK", "tokenId": "0919e328-ddb4-4cc5-9b56-6c6046b05ff8"}'
diterima dari server b'8"\r\n\r\n'
end of string
username henderson logged in, token 0919e328-ddb4-4cc5-9b56-6c6046b05ff8
Command 0919e328-ddb4-4cc5-9b56-6c6046b05ff8:|
```

5. Pada alpine 3 (server) akan tercatat log aktifitas yang dilakukan oleh client. Karena client telah melakukan authentication maka pada server akan menampilkan hal seperti berikut.

```
ryukazuas@LAPTOP-ED7BOT6G x ryukazuas@LAPTOP-ED7BOT6G x ryukazuas@LAPTOP-ED7BOT6G x + v - □ x
WARNING:root:SEND: session 6a6f58e8-1802-4aaf-b31d-d0a94e8b3798 send message from messi to henderson
{'status': 'OK', 'message': 'Message Sent'}
WARNING:root:SEND: session 6a6f58e8-1802-4aaf-b31d-d0a94e8b3798 send message from messi to messi
{'status': 'OK', 'message': 'Message Sent'}
isi mailbox dari messi
{'status': 'OK', 'messages': {'messi': [{'msg_from': 'Lionel Messi', 'msg_to': 'Lionel Messi', 'msg': 'hello gimana kabarnya mess '}]}}
isi mailbox dari henderson
{'status': 'OK', 'messages': {'messi': [{'msg_from': 'Lionel Messi', 'msg_to': 'Jordan Henderson', 'msg': 'hello gimana kabarnya son '}]}}
/home/work # python3 server_thread_chat.py
WARNING:root:connection from ('192.168.122.233', 46016)
WARNING:root:data dari client: auth messi surabay

WARNING:root:AUTH: auth messi surabay
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": "48aa23ce-a203-441a-98c6-92429b73a26a"}

WARNING:root:connection from ('192.168.122.110', 38688)
WARNING:root:data dari client: auth henderson surabaya

WARNING:root:AUTH: auth henderson surabaya
WARNING:root:balas ke client: {"status": "OK", "tokenId": "0919e328-ddb4-4cc5-9b56-6c6046b05ff8"}
```

6. Lakukan pengiriman pesan melalui command pada alpine 1 dan alpine 2 (client) dengan sintaks : send <username yang dituju> <pesan>. Kemudian ketikkan “inbox” melalui command untuk mengetahui pesan yang masuk dari antar client.

```
ryukazuas@LAPTOP-ED7BOT6G x ryukazuas@LAPTOP-ED7BOT6G x ryukazuas@LAPTOP-ED7BOT6G x + - □ x
ConnectionRefusedError: [Errno 111] Connection refused
/home/work # python3 client_cli.py
Command :auth messi surabaya
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": "48aa23ce-a203-441a-98c6-92429b73a26a"}\r\n\r\n'
end of string
username messi logged in, token 48aa23ce-a203-441a-98c6-92429b73a26a
Command 48aa23ce-a203-441a-98c6-92429b73a26a:inbox
diterima dari server b'{"status": "OK", "messages": {"henderson": [{"msg_from": "Jordan", "msg_to": "Lionel Messi", "msg": " good night"}]}}\r\n\r\n'
end of string
{"henderson": [{"msg_from": "Jordan Henderson", "msg_to": "Lionel Messi", "msg": " good night"}]}
Command 48aa23ce-a203-441a-98c6-92429b73a26a:send henderson do u want to join to barcelona?
send 48aa23ce-a203-441a-98c6-92429b73a26a henderson do u want to join to barcelona?

diterima dari server b'{"status": "OK", "message": "Message Sent"}\r\n\r\n'
end of string
message sent to henderson
Command 48aa23ce-a203-441a-98c6-92429b73a26a:inbox
diterima dari server b'{"status": "OK", "messages": {"henderson": [{"msg_from": "Jordan", "msg_to": "Lionel Messi", "msg": " are u joking?"}]}]\r\n\r\n'
end of string
{"henderson": [{"msg_from": "Jordan Henderson", "msg_to": "Lionel Messi", "msg": " are u joking?"}]}
Command 48aa23ce-a203-441a-98c6-92429b73a26a:|
```

```
ryukazuas@LAPTOP-ED7BOT6G x ryukazuas@LAPTOP-ED7BOT6G x ryukazuas@LAPTOP-ED7BOT6G x + - □ x
diterima dari server b'{"status": "OK", "message": "Message Sent"}\r\n\r\n'
end of string
message sent to henderson
Command 0919e328-ddb4-4cc5-9b56-6c6046b05ff8:send messi good night
send 0919e328-ddb4-4cc5-9b56-6c6046b05ff8 messi good night

diterima dari server b'{"status": "OK", "message": "Message Sent"}\r\n\r\n'
end of string
message sent to messi
Command 0919e328-ddb4-4cc5-9b56-6c6046b05ff8:inbox
diterima dari server b'{"status": "OK", "messages": {"henderson": [{"msg_from": "Jordan", "msg_to": "Jordan Henderson", "msg": " good night"}], "messi": [{"msg_from": "Lionel Messi", "msg_to": "Jordan Henderson", "msg": " do u want to join to barcelona?"}]}]\r\n\r\n'
end of string
{"henderson": [{"msg_from": "Jordan Henderson", "msg_to": "Jordan Henderson", "msg": " good night messi, how's life?"}], "messi": [{"msg_from": "Lionel Messi", "msg_to": "Jordan Henderson", "msg": " do u want to join to barcelona?"}]}
Command 0919e328-ddb4-4cc5-9b56-6c6046b05ff8:send messi are u joking?
send 0919e328-ddb4-4cc5-9b56-6c6046b05ff8 messi are u joking?

diterima dari server b'{"status": "OK", "message": "Message Sent"}\r\n\r\n'
end of string
message sent to messi
Command 0919e328-ddb4-4cc5-9b56-6c6046b05ff8:|
```

7. Log command yang dilakukan client akan tercatat dalam server.

```
ryukazuas@LAPTOP-ED7BOT6G x | ryukazuas@LAPTOP-ED7BOT6G x | ryukazuas@LAPTOP-ED7BOT6G x | + v - □ x
ionel Messi", "msg": " good night \r\n"]]]}

WARNING:root:data dari client: send 48aa23ce-a203-441a-98c6-92429b73a26a henderson do u want to join to barcelona?
WARNING:root:SEND: session 48aa23ce-a203-441a-98c6-92429b73a26a send message from messi to henderson
WARNING:root:balas ke client: {"status": "OK", "message": "Message Sent"}

WARNING:root:data dari client: inbox 0919e328-ddb4-4cc5-9b56-6c6046b05ff8
WARNING:root:INBOX: 0919e328-ddb4-4cc5-9b56-6c6046b05ff8
WARNING:root:balas ke client: {"status": "OK", "messages": {"henderson": [], "messi": [{"msg_from": "Lionel Messi", "msg_to": "Jordan Henderson", "msg": " do u want to join to barcelona? \r\n"]]]}

WARNING:root:data dari client: send 0919e328-ddb4-4cc5-9b56-6c6046b05ff8 messi are u joking?
WARNING:root:SEND: session 0919e328-ddb4-4cc5-9b56-6c6046b05ff8 send message from henderson to messi
WARNING:root:balas ke client: {"status": "OK", "message": "Message Sent"}

WARNING:root:data dari client: inbox 48aa23ce-a203-441a-98c6-92429b73a26a
WARNING:root:INBOX: 48aa23ce-a203-441a-98c6-92429b73a26a
WARNING:root:balas ke client: {"status": "OK", "messages": {"henderson": [{"msg_from": "Jordan Henderson", "msg_to": "Lionel Messi", "msg": " are u joking? \r\n"]]]}
```