LK01: Lingkungan Praktik Mandiri + Ujicoba Messaging Protocols

- Buat Lingkungan Praktik Mandiri berbasis VSCode+GitHub Copilot, WSL2 + Ubuntu, Docker Container
- 2. Fork Repository Program: https://github.com/abazh/dist_sys ke dalam akun Github anda
- 3. Lakukan ujicoba per protocol dan modifikasi yang diperlukan
- 4. Buat laporannya dalam respository akun Github anda (bisa private/tidak harus public)
- 5. Invite akun abazh@ub.ac.id ke repository anda.
- 6. Submit link ke repository anda ke Tugas ini.

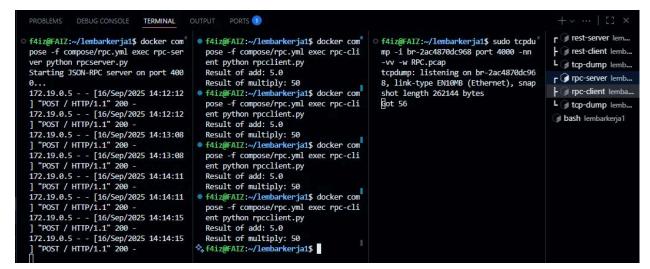
Jawaban:

Agar kita bisa melakukan pengecekan *traffic* paket, maka kita perlu dua *tools*, yakni *wireshark* untuk bisa melihat hasil log dengan lebih mudah, dan tcp dump untuk men-*scan* traffic dan menghasilkan log.

Berikut adalah hasil tangkapan capture packet untuk protokol REST, RPC, SOAP, dan MQTT

```
TERMINAL
                                                      PORTS 1
                                                                                                                                             rest-server lem.
-f compose/rest.yml exec rest-server pyth
                                                      er compose -f compose/rest.yml
                                                                                               mp -i br-2ac4870dc968 port 5151 -nn
                                                       exec rest-client python clien
                                                                                               -vv
on server.py
                                                                                                                                              rest-client lemb.
T /add?a=2&b=3 HTTP/1.1" 200 -
                                                      t.py --op both -a 2 -b 3
                                                                                               ^C
                                                                                                                                              L ( tcp-dump lemb..
172.19.0.3 - - [16/Sep/2025 14:09:17] "GE
T /mul?a=2&b=3 HTTP/1.1" 200 -
                                                    • f4iz@FAIZ:~/lembarkerja1$ dock
er compose -f compose/rest.yml
                                                                                               48 packets captured
                                                                                                                                              r 🕟 bash lembarkerja1
                                                                                               48 packets received by filter
172.19.0.3 - - [16/Sep/2025 14:09:44] "GE T /add?a=2&b=3 HTTP/1.1" 200 -
                                                      exec rest-client python clien
                                                                                                                                              - a bash lembarkerja1
                                                                                             0 packets dropped by kernel
• f4iz@FAIZ:~/lembarkerja1$ sudo tcpdu
                                                      t.py --op both -a 2 -b 3
                                                                                                                                             L 🍞 bash lembarkerja1
172.19.0.3 - - [16/Sep/2025 14:09:44] "GE T /mul?a=2&b=3 HTTP/1.1" 200 -
                                                      add(2,3) = 5
                                                                                               mp -i br-2ac4870dc968 port 5151 -nn
                                                                                                                                              bash lembarkeria1
                                                      mul(2,3) = 6
                                                    mul(2,3) = 6
• f4iz@FAIZ:~/le
Open file in editor (ctrl + click) p: listening on br-2ac4870dc96
172.19.0.3 - - [16/Sep/2025 14:10:48] "GE
T /add?a=2&b=3 HTTP/1.1" 200 -
                                                      er compose -f compose/rest.yml
                                                                                               8, link-type EN10MB (Ethernet), snap
                                                      exec rest-client python clien
t.py --op both -a 2 -b 3
                                                                                               shot length 262144 bytes
172.19.0.3 - - [16/Sep/2025 14:10:48] "GE
T /mul?a=2&b=3 HTTP/1.1" 200
                                                                                               ^C0 packets captured
172.19.0.3 - - [16/Sep/2025 14:10:50] "GE T /add?a=2&b=3 HTTP/1.1" 200 -
                                                      add(2,3) = 5
                                                                                               0 packets received by filter
                                                      mul(2,3) = 6
                                                                                               0 packets dropped by kernel
                                                                                              f4iz@FAIZ:~/lembarkerja1$ sudo tcpdu
172.19.0.3 - - [16/Sep/2025 14:10:50] "GE
                                                    f4iz@FAIZ:~/lembarkerja1$ dock
                                                      er compose -f compose/rest.yml
T /mul?a=2&b=3 HTTP/1.1" 200
                                                                                               mp -i br-2ac4870dc968 port 5151 -nn
172.19.0.3 - - [16/Sep/2025 14:10:52] "GE
T /add?a=2&b=3 HTTP/1.1" 200 -
                                                       exec rest-client python clien
                                                                                                -vv -w REST.pcap
                                                      t.py --op both -a 2 -b 3
                                                                                               tcpdump: listening on br-2ac4870dc96
172.19.0.3 - - [16/Sep/2025 14:10:52] "GE
                                                                                               8, link-type EN10MB (Ethernet), snap
                                                      add(2,3) = 5
 /mul?a=2&b=3 HTTP/1.1" 200 -
                                                                                                shot length 262144 bytes
                                                      mul(2,3) = 6
                                                   ♦ f4iz@FAIZ:~/lembarkerja1$
                                                                                               ot 72
```

REST

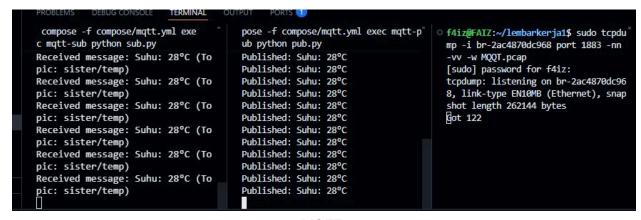


RPC

```
TERMINAL
                                              PORTS 1
pose -f compose/soap.yml exec soap-s
                                         f4iz@FAIZ:~/lembarkerja1$ docker com"
                                                                                f4iz@FAIZ:~/lembarkerja1$ sudo tcpdu
erver python server.py
                                         pose -f compose/soap.yml exec soap-c
                                                                                  mp -i br-2ac4870dc968 port 8000 -nn
                                         lient python client.py
172.19.0.7 - - [16/Sep/2025 14:19:53
                                                                                  -vv -w SOAP.pcap
] "GET /?wsdl HTTP/1.1" 200 2472
                                                                                  [sudo] password for f4iz:
172.19.0.7 - - [16/Sep/2025 14:19:53
                                       • f4iz@FAIZ:~/lembarkerja1$ docker com
                                                                                  tcpdump: listening on br-2ac4870dc96
POST / HTTP/1.1" 200 279
                                                                                  8, link-type EN10MB (Ethernet), snap
                                         pose -f compose/soap.yml exec soap-c
172.19.0.7 - - [16/Sep/2025 14:19:57
                                         lient python client.py
                                                                                  shot length 262144 bytes
] "GET /?wsdl HTTP/1.1" 200 2472
                                         WARN[0000] /home/f4iz/lembarkerja1/c
                                                                                  Got 70
172.19.0.7 - - [16/Sep/2025 14:19:57
                                         ompose/soap.yml: the attribute `vers
] "POST / HTTP/1.1" 200 279
                                         ion` is obsolete, it will be ignored
                                         , please remove it to avoid potentia
172.19.0.7 - - [16/Sep/2025 14:20:00
] "GET /?wsdl HTTP/1.1" 200 2472
                                         1 confusion
172.19.0.7 - - [16/Sep/2025 14:20:00
                                         Hasil penjumlahan dari server SOAP:
  "POST / HTTP/1.1" 200 279
                                         15

$\diz@FAIZ:~/lembarkerja1$
```

SOAP



MQTT