Top-left terminal

```
root@node:~/cs4480-2025-s/pa3/part1# hostname
node.lhunter-252957.cs4480-2025.emulab.net
root@node:~/cs4480-2025-s/pa3/part1# cat /var/emulab/boot/creator
LHunter
root@node:~/cs4480-2025-s/pa3/part1# geni-get user_urn
urn:publicid:IDN+emulab.net+user+LHunter
root@node:~/cs4480-2025-s/pa3/part1# geni-get status
{"geni_urn":"urn:publicid:IDN+emulab.net:cs4480-2025+slice+LHunter-252957",geni_
slivers":[{"geni_urn":"urn:publicid:IDN+emulab.net+sliver+1645898","geni_expires
":"2025-04-16 08:00:00","geni_allocation_status":"geni_provisioned","geni_operat
ional_status":"geni_ready","geni_error":""}]}
root@node:~/cs4480-2025-s/pa3/part1# docker ps
CONTAINER ID   IMAGE          COMMAND           CREATED          STATUS
        PORTS     NAMES
f42cc4526ac6   alpine:latest  "sh -c 'apk add --no"  10 minutes ago   Up 10 m
inutes           part1-h1-1
d886376c6bdb   alpine:latest  "sh -c 'ip route del"  10 minutes ago   Up 10 m
inutes           part1-h2-1
012b63e3f594   part1-r4       "sh -c '/usr/lib/frr"  10 minutes ago   Up 10 m
inutes           part1-r4-1
6e91ec6908ac   part1-r1       "sh -c '/usr/lib/frr"  10 minutes ago   Up 10 m
inutes           part1-r1-1
d33e7d6a5f5f   part1-r2       "sh -c '/usr/lib/frr"  10 minutes ago   Up 10 m
inutes           part1-r2-1
ea57c949b587   part1-r3       "sh -c '/usr/lib/frr"  10 minutes ago   Up 10 m
inutes           part1-r3-1
root@node:~/cs4480-2025-s/pa3/part1# docker network ls
NETWORK ID     NAME           DRIVER      SCOPE
3a038a37a84d   bridge         bridge      local
96430799a1c2   host           host        local
fb08c8e1a2e7   none           null        local
5c1e201dd540   part1_net1     bridge      local
e4771bc1a48a   part1_net2     bridge      local
00715f1a765f   part1_net12    bridge      local
6e1b983718b5   part1_net14    bridge      local
622034b66b7a   part1_net23    bridge      local
ad587c5baf5d   part1_net34    bridge      local
```

Top-right terminal

```
root@node:~/cs4480-2025-s/pa3/part1# docker exec -it part1-r1-1 vtysh

Hello, this is FRRouting (version 10.3).
Copyright 1996-2005 Kunihiro Ishiguro, et al.

6e91ec6908ac# show ip ospf neighbor

Neighbor ID    Pri State         Up Time      Dead Time Address       In
terface            RXmtL RqstL DBsmL
2.2.2.2        1 Full/DR         11m38s         31.546s 172.30.12.20    et
h1:172.30.12.10          0     0    0
4.4.4.4        1 Full/DR         11m36s         33.295s 172.30.13.40    et
h2:172.30.13.10          0     0    0

6e91ec6908ac# show ip ospf route
============ OSPF network routing table ============
N    172.30.12.0/24       [5] area: 0.0.0.0
                          directly attached to eth1
N    172.30.13.0/24       [1000] area: 0.0.0.0
                          directly attached to eth2
N    172.30.14.0/24       [10] area: 0.0.0.0
                          directly attached to eth0
N    172.30.23.0/24       [15] area: 0.0.0.0
                          via 172.30.12.20, eth1
N    172.30.34.0/24       [25] area: 0.0.0.0
                          via 172.30.12.20, eth1
N    172.30.35.0/24       [1015] area: 0.0.0.0
                          via 172.30.12.20, eth1

============ OSPF router routing table ============

============ OSPF external routing table ==========

6e91ec6908ac# read escape sequence
root@node:~/cs4480-2025-s/pa3/part1#
```

Bottom-left terminal

```
root@node:~/cs4480-2025-s/pa3/part1/frr/r1# docker exec part1-h1-1 ping -c1 172.30.35.30
PING 172.30.35.30 (172.30.35.30): 56 data bytes
64 bytes from 172.30.35.30: seq=0 ttl=61 time=0.357 ms

--- 172.30.35.30 ping statistics ---
1 packets transmitted, 1 packets received, 0% packet loss
round-trip min/avg/max = 0.357/0.357/0.357 ms
root@node:~/cs4480-2025-s/pa3/part1/frr/r1#
```

Bottom-right terminal

```
root@node:~/cs4480-2025-s/pa3/part1# docker exec -it part1-r2-1 tcpdump -ni eth0 icm
p
tcpdump: verbose output suppressed, use -v[v]... for full protocol decode
listening on eth0, link-type EN10MB (Ethernet), snapshot length 262144 bytes
06:58:12.046752 IP 172.30.14.30 > 172.30.35.30: ICMP echo request, id 88, seq 0, len
gth 64
06:58:12.046857 IP 172.30.35.30 > 172.30.14.30: ICMP echo reply, id 88, seq 0, lengt
h 64
```