

```

ok@virt:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group d
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast stat
    link/ether 08:00:27:e6:dd:b7 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 metric 100 brd 10.0.2.255 scope global dynamic enp0s3
        valid_lft 85944sec preferred_lft 85944sec
    inet6 fd00::a00:27ff:fee6:ddb7/64 scope global dynamic mngtmpaddr nopre
        valid_lft 86147sec preferred_lft 14147sec
    inet6 fe80::a00:27ff:fee6:ddb7/64 scope link
        valid_lft forever preferred_lft forever
ok@virt:~$ sudo ifconfig enp0s3 192.168.0.110 netmask 255.255.255.0
ok@virt:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group d
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast stat
    link/ether 08:00:27:e6:dd:b7 brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.110/24 metric 100 brd 192.168.0.255 scope global enp0s3
        valid_lft forever preferred_lft forever
    inet6 fd00::a00:27ff:fee6:ddb7/64 scope global dynamic mngtmpaddr nopre
        valid_lft 86367sec preferred_lft 14367sec
    inet6 fe80::a00:27ff:fee6:ddb7/64 scope link
        valid_lft forever preferred_lft forever
ok@virt:~$ sudo route add default gw 192.168.0.1 enp0s3
ok@virt:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group d
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast stat
    link/ether 08:00:27:e6:dd:b7 brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.110/24 metric 100 brd 192.168.0.255 scope global enp0s3
        valid_lft forever preferred_lft forever
    inet6 fd00::a00:27ff:fee6:ddb7/64 scope global dynamic mngtmpaddr nopre
        valid_lft 86254sec preferred_lft 14254sec
    inet6 fe80::a00:27ff:fee6:ddb7/64 scope link
        valid_lft forever preferred_lft forever
ok@virt:~$

```

```

ok@virt:~$ ping github.com
PING github.com (140.82.121.4) 56(84) bytes of data.
64 bytes from lb-140-82-121-4-fra.github.com (140.82.121.4): icmp_seq=1 ttl=255 time=33.2 ms
64 bytes from lb-140-82-121-4-fra.github.com (140.82.121.4): icmp_seq=2 ttl=255 time=33.0 ms
64 bytes from lb-140-82-121-4-fra.github.com (140.82.121.4): icmp_seq=3 ttl=255 time=32.9 ms
64 bytes from lb-140-82-121-4-fra.github.com (140.82.121.4): icmp_seq=4 ttl=255 time=32.6 ms
64 bytes from lb-140-82-121-4-fra.github.com (140.82.121.4): icmp_seq=5 ttl=255 time=34.0 ms
64 bytes from lb-140-82-121-4-fra.github.com (140.82.121.4): icmp_seq=6 ttl=255 time=34.1 ms
64 bytes from lb-140-82-121-4-fra.github.com (140.82.121.4): icmp_seq=7 ttl=255 time=32.2 ms
^C
--- github.com ping statistics ---
7 packets transmitted, 7 received, 0% packet loss, time 10122ms
rtt min/avg/max/mdev = 32.171/33.157/34.105/0.648 ms

```

```

ok@virt:~$ traceroute github.com
traceroute to github.com (140.82.121.3), 30 hops max, 60 byte packets
 1  _gateway (10.0.2.2)  0.565 ms  0.475 ms  0.186 ms
 2  * * *
 3  * * *
 4  * * *
 5  * * *
 6  * * *
 7  * * *
 8  * * *
 9  * * *
10  * * *
11  * * *
12  * * *AC

```

```

ok@virt:~$ netstat
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp6      0      0 virt:ssh                _gateway:52504         ESTABLISHED

Active UNIX domain sockets (w/o servers)
Proto RefCnt Flags               Type                   State         I-Node  Path
unix    3      [ ] DGRAM              CONNECTED        4637
unix    3      [ ] DGRAM              CONNECTED        6342
unix    3      [ ] STREAM            CONNECTED        9394
unix    3      [ ] DGRAM              CONNECTED        3891
unix    3      [ ] STREAM            CONNECTED        1940
unix    3      [ ] DGRAM              CONNECTED        6341
unix    3      [ ] STREAM            CONNECTED        1484
unix    3      [ ] STREAM            CONNECTED        3937      /run/systemd/journal/stdout
unix    3      [ ] DGRAM              CONNECTED        4638
unix    2      [ ] DGRAM              CONNECTED        8088      /run/user/1000/systemd/notify
unix    2      [ ] DGRAM              CONNECTED        2008
unix    2      [ ] DGRAM              CONNECTED        1725
unix    3      [ ] DGRAM              CONNECTED        3892
unix    2      [ ] DGRAM              CONNECTED        3887
unix    2      [ ] DGRAM              CONNECTED        6336
unix    2      [ ] DGRAM              CONNECTED        6316
unix    3      [ ] STREAM            CONNECTED        8436      /run/dbus/system_bus_socket
unix    3      [ ] STREAM            CONNECTED        9393
unix    3      [ ] DGRAM              CONNECTED        6344
unix    2      [ ] DGRAM              CONNECTED        3779
unix    3      [ ] STREAM            CONNECTED        6855      /run/systemd/journal/stdout
unix    3      [ ] STREAM            CONNECTED        3881
unix    3      [ ] STREAM            CONNECTED        6892      /run/systemd/journal/stdout
unix    3      [ ] DGRAM              CONNECTED        6343
unix    3      [ ] STREAM            CONNECTED        5920      /run/systemd/journal/stdout
unix    3      [ ] STREAM            CONNECTED        4073
unix    3      [ ] STREAM            CONNECTED        1956

```

```
ok@virt:~$ dig github.com
```

```
; <<>> DiG 9.18.30-0ubuntu0.24.04.2-Ubuntu <<>> github.com
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 21741
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags;; udp: 65494
;; QUESTION SECTION:
;github.com.                IN      A

;; ANSWER SECTION:
github.com.                 43      IN      A      140.82.121.3

;; Query time: 0 msec
;; SERVER: 127.0.0.53#53(127.0.0.53) (UDP)
;; WHEN: Mon Mar 03 18:56:21 UTC 2025
;; MSG SIZE rcvd: 55
```

```
ok@virt:~$ dig nung.edu.ua A
```

```
; <<>> DiG 9.18.30-0ubuntu0.24.04.2-Ubuntu <<>> nung.edu.ua A
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 12096
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags;; udp: 65494
;; QUESTION SECTION:
;nung.edu.ua.              IN      A

;; ANSWER SECTION:
nung.edu.ua.               7106    IN      A      194.44.112.4

;; Query time: 1 msec
;; SERVER: 127.0.0.53#53(127.0.0.53) (UDP)
;; WHEN: Mon Mar 03 18:56:26 UTC 2025
;; MSG SIZE rcvd: 56
```

```

ok@virt:~$ dig dn.nung.edu.ua NS

; <<> DiG 9.18.30-0ubuntu0.24.04.2-Ubuntu <<> dn.nung.edu.ua NS
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 3472
;; flags: qr rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 65494
;; QUESTION SECTION:
;dn.nung.edu.ua.                IN      NS

;; AUTHORITY SECTION:
nung.edu.ua.                    1800    IN      SOA     zeta.uar.net. hostmaster.nung.edu.ua. 2025
0301010000

;; Query time: 92 msec
;; SERVER: 127.0.0.53#53(127.0.0.53) (UDP)
;; WHEN: Mon Mar 03 18:56:42 UTC 2025
;; MSG SIZE rcvd: 102

ok@virt:~$ dig github.com AAAA

; <<> DiG 9.18.30-0ubuntu0.24.04.2-Ubuntu <<> github.com AAAA
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 62091
;; flags: qr rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 65494
;; QUESTION SECTION:
;github.com.                    IN      AAAA

;; AUTHORITY SECTION:
github.com.                     1668    IN      SOA     dns1.p08.nsone.net. hostmaster.nsone.net.
20250301010000

;; Query time: 38 msec
;; SERVER: 127.0.0.53#53(127.0.0.53) (UDP)
;; WHEN: Mon Mar 03 18:57:37 UTC 2025
;; MSG SIZE rcvd: 104

```

```

ok@virt:~$ nslookup github.com
Server:          127.0.0.53
Address:         127.0.0.53#53

Non-authoritative answer:
Name:   github.com
Address: 140.82.121.4

```

```

ok@virt:~$ host github.com
github.com has address 140.82.121.3
github.com mail is handled by 10 alt3.aspmx.l.google.com.
github.com mail is handled by 1 aspmx.l.google.com.
github.com mail is handled by 10 alt4.aspmx.l.google.com.
github.com mail is handled by 5 alt2.aspmx.l.google.com.
github.com mail is handled by 5 alt1.aspmx.l.google.com.

```

```
ok@virt:~$ route
Kernel IP routing table
Destination      Gateway          Genmask          Flags Metric Ref    Use Iface
default          _gateway        0.0.0.0          UG     100    0      0 enp0s3
10.0.2.0         0.0.0.0         255.255.255.0   U      100    0      0 enp0s3
_gateway        0.0.0.0         255.255.255.255 UH     100    0      0 enp0s3
10.0.2.3         0.0.0.0         255.255.255.255 UH     100    0      0 enp0s3
ok@virt:~$
```

```
ok@virt:~$ curl curl 'https://dn.nung.edu.ua/lib/ajax/service.php?sesskey=8XTFnX0xqP&info=core_session_time_remaining&nosessionupdate=true' \
-H 'accept: application/json, text/javascript, */*; q=0.01' \
-H 'accept-language: en-UA,en;q=0.9,uk-UA;q=0.8,uk;q=0.7,en-GB;q=0.6,en-US;q=0.5' \
-H 'content-type: application/json' \
-b 'MoodleSession=sil9ebrr45ck5ks7je9afururu' \
-H 'origin: https://dn.nung.edu.ua' \
-H 'priority: u=1, i' \
-H 'referer: https://dn.nung.edu.ua/course/view.php?id=2338' \
-H 'sec-ch-ua: "Not(A:Brand";v="99", "Google Chrome";v="133", "Chromium";v="133"' \
-H 'sec-ch-ua-mobile: ?0' \
-H 'sec-ch-ua-platform: "windows"' \
-H 'sec-fetch-dest: empty' \
-H 'sec-fetch-mode: cors' \
-H 'sec-fetch-site: same-origin' \
-H 'user-agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/133.0.0.0 Safari/537.36' \
-H 'x-requested-with: XMLHttpRequest' \
--data-raw '[{"index":0,"methodname":"core_session_time_remaining","args":{}}]'
curl: (6) Could not resolve host: curl
[{"error":false,"data":{"userid":14236,"timeremaining":28657}}]ok@virt:~$ curl curl 'https://dn.nung.edu.ua/lib/ajax/service.php?sesskey=8XTFnX0xqP&info=core_session_time_remaining&nosessionupdate=true' \
-H 'accept: application/json, text/javascript, */*; q=0.01' \
-H 'accept-language: en-UA,en;q=0.9,uk-UA;q=0.8,uk;q=0.7,en-GB;q=0.6,en-US;q=0.5' \
-H 'content-type: application/json' \
-b 'MoodleSession=sil9ebrr45ck5ks7je9afururu' \
-H 'origin: https://dn.nung.edu.ua' \
-H 'priority: u=1, i' \
-H 'referer: https://dn.nung.edu.ua/course/view.php?id=2338' \
-H 'sec-ch-ua: "Not(A:Brand";v="99", "Google Chrome";v="133", "Chromium";v="133"' \
-H 'sec-ch-ua-mobile: ?0' \
-H 'sec-ch-ua-platform: "windows"' \
-H 'sec-fetch-dest: empty' \
-H 'sec-fetch-mode: cors' \
-H 'sec-fetch-site: same-origin' \
-H 'user-agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/133.0.0.0 Safari/537.36' \
-H 'x-requested-with: XMLHttpRequest' \
--data-raw '[{"index":0,"methodname":"core_session_time_remaining","args":{}}]'
curl: (6) Could not resolve host: curl
[{"error":false,"data":{"userid":14236,"timeremaining":28657}}]ok@virt:~$ curl https://dn.nung.edu.ua/mod/resource/view.php?id=129878
<!DOCTYPE html>
<html lang="uk" xml:lang="uk">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />

<title>Перенаправити</title>
</head><body><div style="margin-top: 3em; margin-left:auto; margin-right:auto; text-align:center;">Ця сторінка повинна автоматично перенаправляти...
ся, будь ласка, скористайтеся наступним посиланням для продовження.<br /><a href="https://dn.nung.edu.ua/enrol/index.php?id=2338">продовжити</a></div>
</body>
</html>
```

```
ok@virt:~$ wget https://docs.docker.com/desktop/linux/install/
--2025-03-03 19:07:00-- https://docs.docker.com/desktop/linux/install/
Resolving docs.docker.com (docs.docker.com)... 13.227.146.92, 13.227.146.69, 13.227.146.44, ...
Connecting to docs.docker.com (docs.docker.com)|13.227.146.92|:443... connected.
HTTP request sent, awaiting response... 301 Moved Permanently
Location: /desktop/setup/install/linux/ [following]
--2025-03-03 19:07:00-- https://docs.docker.com/desktop/setup/install/linux/
Reusing existing connection to docs.docker.com:443.
HTTP request sent, awaiting response... 200 OK
Length: 326751 (319K) [text/html]
Saving to: 'index.html'

index.html                               100%[=====] 319.09K  965KB/s   in 0.3s

2025-03-03 19:07:01 (965 KB/s) - 'index.html' saved [326751/326751]
```

```
ok@virt:~$ nmap github.com
Starting Nmap 7.94SVN ( https://nmap.org ) at 2025-03-03 19:08 UTC
Nmap scan report for github.com (140.82.121.3)
Host is up (0.032s latency).
rDNS record for 140.82.121.3: 1b-140-82-121-3-fra.github.com
Not shown: 997 filtered tcp ports (no-response)
PORT      STATE SERVICE
22/tcp    open  ssh
80/tcp    open  http
443/tcp   open  https

Nmap done: 1 IP address (1 host up) scanned in 5.62 seconds
```



```
ok@virt:~$ sudo tcpdump -l
tcpdump: verbose output suppressed, use -v[v]... for full protocol details
listening on enp0s3, link-type EN10MB (Ethernet), snapshot length 262144
19:10:48.405324 IP _gateway.52638 > virt.ssh: Flags [P.], seq 653637
19:10:48.405537 IP virt.ssh > _gateway.52638: Flags [P.], seq 1:37, win 0
19:10:48.407839 IP _gateway.52638 > virt.ssh: Flags [.], ack 37, win 0
19:10:48.416107 IP virt.ssh > _gateway.52638: Flags [P.], seq 37:233, win 0
19:10:48.416759 IP _gateway.52638 > virt.ssh: Flags [.], ack 233, win 0
19:10:48.425095 IP _gateway.52638 > virt.ssh: Flags [P.], seq 36:72, win 0
19:10:48.425273 IP virt.ssh > _gateway.52638: Flags [P.], seq 233:26, win 0
19:10:48.430501 IP _gateway.52638 > virt.ssh: Flags [.], ack 269, win 0
19:10:48.445560 IP _gateway.52638 > virt.ssh: Flags [P.], seq 72:108, win 0
19:10:48.445837 IP virt.ssh > _gateway.52638: Flags [P.], seq 269:30, win 0
19:10:48.448930 IP _gateway.52638 > virt.ssh: Flags [.], ack 305, win 0
19:10:48.465921 IP _gateway.52638 > virt.ssh: Flags [P.], seq 108:14, win 0
19:10:48.466145 IP virt.ssh > _gateway.52638: Flags [P.], seq 305:34, win 0
19:10:48.469577 IP _gateway.52638 > virt.ssh: Flags [.], ack 341, win 0
19:10:48.485961 IP _gateway.52638 > virt.ssh: Flags [P.], seq 144:18, win 0
19:10:48.486169 IP virt.ssh > _gateway.52638: Flags [P.], seq 341:37, win 0
19:10:48.488611 IP _gateway.52638 > virt.ssh: Flags [.], ack 377, win 0
19:10:48.505675 IP _gateway.52638 > virt.ssh: Flags [P.], seq 180:21, win 0
19:10:48.505905 IP virt.ssh > _gateway.52638: Flags [P.], seq 377:41, win 0
19:10:48.508244 IP _gateway.52638 > virt.ssh: Flags [.], ack 413, win 0
19:10:48.524793 IP _gateway.52638 > virt.ssh: Flags [P.], seq 216:25, win 0
19:10:48.525097 IP virt.ssh > _gateway.52638: Flags [P.], seq 413:44, win 0
19:10:48.528731 IP _gateway.52638 > virt.ssh: Flags [.], ack 449, win 0
19:10:48.545195 IP _gateway.52638 > virt.ssh: Flags [P.], seq 252:28, win 0
19:10:48.545709 IP virt.ssh > _gateway.52638: Flags [P.], seq 449:48, win 0
19:10:48.549609 IP _gateway.52638 > virt.ssh: Flags [.], ack 485, win 0
19:10:48.563847 IP _gateway.52638 > virt.ssh: Flags [P.], seq 288:32, win 0
19:10:48.564406 IP virt.ssh > _gateway.52638: Flags [P.], seq 485:52, win 0
19:10:48.567670 IP _gateway.52638 > virt.ssh: Flags [.], ack 521, win 0
19:10:48.584440 IP _gateway.52638 > virt.ssh: Flags [P.], seq 324:36, win 0
19:10:48.584903 IP virt.ssh > _gateway.52638: Flags [P.], seq 521:55, win 0
19:10:48.588393 IP _gateway.52638 > virt.ssh: Flags [.], ack 557, win 0
19:10:48.604017 IP _gateway.52638 > virt.ssh: Flags [P.], seq 360:39, win 0
19:10:48.604278 IP virt.ssh > _gateway.52638: Flags [P.], seq 557:59, win 0
19:10:48.606822 IP _gateway.52638 > virt.ssh: Flags [.], ack 593, win 0
```