۱،۱. آدرس ip سایت twitter.com با استفاده از دستور nslookup و ping کردن آن

```
C:\Users\moradi>nslookup twitter.com
Server:   UnKnown
Address:  fe80::5e51:81ff:fe0a:5a6d

Non-authoritative answer:
Name:     twitter.com
Addresses: 10.10.34.35
          10.10.34.35


C:\Users\moradi>ping 10.10.34.35

Pinging 10.10.34.35 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 10.10.34.35:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

۲-۱)   آدرس ip سایت twitter.com با استفاده از سایت ping.eu و ping کردن آن

```
twitter.com has address 104.244.42.193
twitter.com has address 104.244.42.1
```

```
C:\Users\moradi>ping 104.244.42.193

Pinging 104.244.42.193 with 32 bytes of data:
Reply from 104.244.42.193: bytes=32 time=149ms TTL=47
Reply from 104.244.42.193: bytes=32 time=128ms TTL=47
Reply from 104.244.42.193: bytes=32 time=125ms TTL=47
Reply from 104.244.42.193: bytes=32 time=385ms TTL=47

Ping statistics for 104.244.42.193:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 125ms, Maximum = 385ms, Average = 196ms
```

دو آدرس متفاوت می باشد. به دلیل اینکه سایت twitter برای ما فیلتر شده است و آدرس ip که سیستم به
ما می دهد، اشتباه هست و نمیتواند ping یا traceroot کند.

٣-١) tracert کردن سایت twitter با ip به دست آمده از دستور nslookup

```
C:\Users\moradi>tracert 10.10.34.35

Tracing route to 10.10.34.35 over a maximum of 30 hops

  1     39 ms      1 ms      1 ms  192.168.43.1
  2      *         *         *     Request timed out.
  3      *         *         *     Request timed out.
  4      *         *         *     Request timed out.
  5      *         *         *     Request timed out.
  6      *         *         *     Request timed out.
  7      *         *         *     Request timed out.
  8      *         *         *     Request timed out.
  9      *         *         *     Request timed out.
 10     74 ms     91 ms     36 ms  10.21.251.166
 11     78 ms     59 ms      *     10.21.111.10
 12     44 ms     57 ms     77 ms  10.21.21.11
 13      *         *         *     Request timed out.
 14      *         *         *     Request timed out.
 15    151 ms     51 ms     45 ms  185.57.202.229
 16      *         *         *     Request timed out.
 17      *         *         *     Request timed out.
 18      *         *         *     Request timed out.
 19      *         *         *     Request timed out.
 20      *         *         *     Request timed out.
 21      *         *         *     Request timed out.
 22      *         *         *     Request timed out.
 23      *         *         *     Request timed out.
 24      *         *         *     Request timed out.
 25      *         *         *     Request timed out.
 26      *         *         *     Request timed out.
 27      *         *         *     Request timed out.
 28      *         *         *     Request timed out.
 29      *         *         *     Request timed out.
 30      *         *         *     Request timed out.

Trace complete.
```

tracert کردن سایت twitter با ip به دست آمده از سایت ping.eu

```
C:\Users\moradi>tracert 104.244.42.193

Tracing route to 104.244.42.193 over a maximum of 30 hops

  1     10 ms      1 ms      1 ms  192.168.43.1
  2      *         *         *     Request timed out.
  3      *         *         *     Request timed out.
  4      *         *         *     Request timed out.
  5      *         *         *     Request timed out.
  6      *         *         *     Request timed out.
  7      *         *         *     Request timed out.
  8      *         *         *     Request timed out.
  9     42 ms     38 ms     38 ms  10.21.251.166
 10     56 ms      *        70 ms  10.21.111.10
 11    130 ms    119 ms    116 ms  193.251.252.153
 12    126 ms    107 ms    132 ms  et-13-0-0-0.ffttr7.frankfurt.opentransit.net [19
3.251.133.7]
 13    123 ms    119 ms    118 ms  ntteurope-4.gw.opentransit.net [193.251.247.156]

 14    138 ms    135 ms    125 ms  ae-3.r21.frnkge13.de.bb.gin.ntt.net [129.250.6.5
0]
 15    131 ms    117 ms    118 ms  ae-5.r00.frnkge07.de.bb.gin.ntt.net [129.250.4.1
85]
 16    186 ms    131 ms    118 ms  213.198.82.214
 17    150 ms    130 ms    118 ms  104.244.42.193

Trace complete.
```

۴-۱) دو گره اول، خط ۹و۱۰۹، local هستند و با ۱۰ شروع میشوند و بقیه گره ها global هستند.

193.251.247.156 🔍

ip: "193.251.247.156"
hostname: "ntteurope-4.gw.opentransit.net"
city: "Paris"
region: "Île-de-France"
country: "FR"
loc: "48.8534,2.3488"
org: "AS5511 Orange S.A."
postal: "75000"
timezone: "Europe/Paris"
asn: Object
  asn: "AS5511"
  name: "Orange S.A."

Try: Your IP | 8.8.4.4 | AS15169

129.250.6.50 🔍

ip: "129.250.6.50"
hostname: "ae-3.r21.frnkge13.de.bb.gin.ntt.net"
city: "Frankfurt am Main"
region: "Hesse"
country: "DE"
loc: "50.1155,8.6842"
org: "AS2914 NTT America, Inc."
postal: "60311"
timezone: "Europe/Berlin"
asn: Object
  asn: "AS2914"
  name: "NTT America, Inc."

Try: Your IP | 8.8.4.4 | AS15169

129.250.4.185 🔍

```
ip: "129.250.4.185"
hostname: "ae-5.r00.frnkge07.de.bb.gin.ntt.net"
city: "Frankfurt am Main"
region: "Hesse"
country: "DE"
loc: "50.1155,8.6842"
org: "AS2914 NTT America, Inc."
postal: "60311"
timezone: "Europe/Berlin"
asn: Object
    asn: "AS2914"
    name: "NTT America, Inc."
```

Try: Your IP   8.8.4.4   AS15169

213.198.82.214 🔍

```
ip: "213.198.82.214"
city: "Frankfurt am Main"
region: "Hesse"
country: "DE"
loc: "50.1155,8.6842"
org: "AS2914 NTT America, Inc."
postal: "60311"
timezone: "Europe/Berlin"
asn: Object
    asn: "AS2914"
    name: "NTT America, Inc."
    domain: "ntt.com"
```
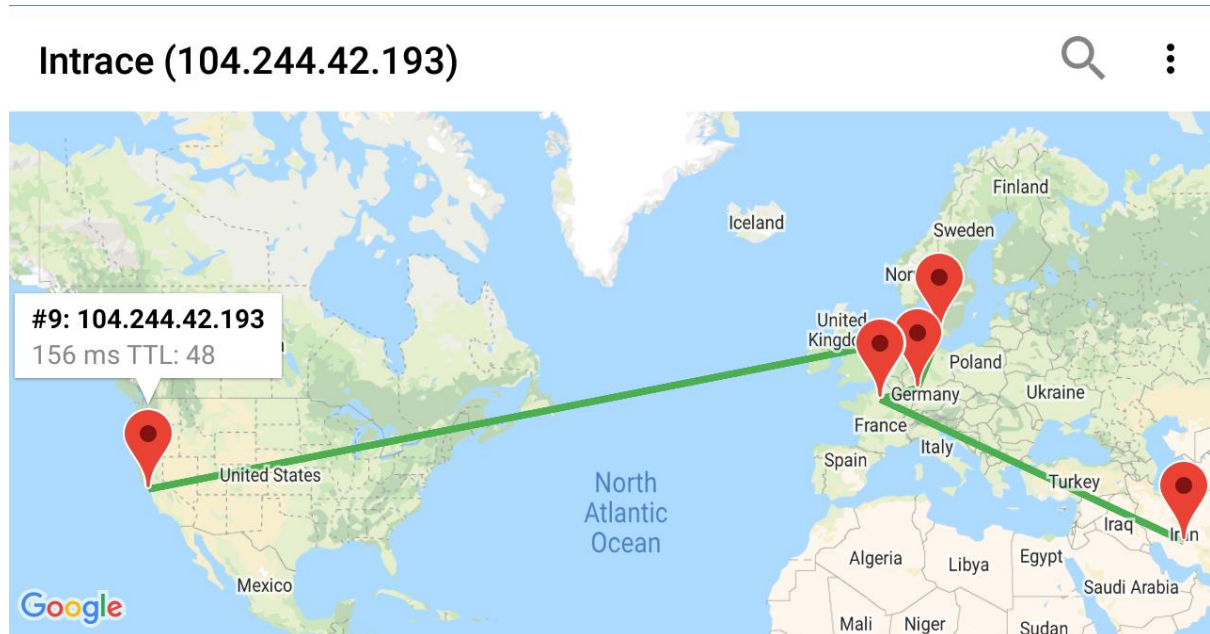
Try: Your IP   8.8.4.4   AS15169

۵-۱) مسیر ارتباطی با سرور twitter

#0: Your coordinates

lat/lng: (30.413052156979276,54.158866368234165)

#1: IP: 10.21.251.166

Host: 10.21.251.166

ISP: N/A

Ping:

5088 ms (TCP)

5078 ms (TCP)

5082 ms (TCP)

N/A

lat: 0.0

lon: 0.0

#2: IP: 10.21.111.10

Host: 10.21.111.10

ISP: N/A

Ping:

5079 ms (TCP)

5070 ms (TCP)

5081 ms (TCP)

N/A

lat: 0.0

lon: 0.0

#3: IP: 193.251.252.153

Host: 193.251.252.153

ISP: France Telecom ()

Ping:

112 ms TTL: 54

115 ms TTL: 54

115 ms TTL: 54

France (Paris)

lat: 48.8627

lon: 2.35976

#5: IP: 193.251.247.156

Host: ntteurope-4.gw.opentransit.net

ISP: France Telecom ()

Ping:

141 ms TTL: 239

120 ms TTL: 239

138 ms TTL: 239

France (Paris)

lat: 48.8627

lon: 2.35976

#4: IP: 193.251.133.7

Host: et-13-0-0-0.ffttr7.frankfurt.opentransit.net

ISP: France Telecom ()

Ping:

5066 ms (TCP)

5078 ms (TCP)

5073 ms (TCP)

France (Bagnolet)

lat: 48.8686

lon: 2.41473

#6: IP: 129.250.6.50

Host: ae-3.r21.frnkge13.de.bb.gin.ntt.net

ISP: NTT America, Inc. (NTT America, Inc.)

Ping:

129 ms TTL: 50

122 ms TTL: 50

124 ms TTL: 50

Germany (Frankfurt am Main)

lat: 50.1109

lon: 8.68213

#7: IP: 129.250.4.185

Host: ae-5.r00.frnkge07.de.bb.gin.ntt.net

ISP: NTT America, Inc. (NTT America, Inc.)

Ping:

124 ms TTL: 241

131 ms TTL: 241

127 ms TTL: 241

Germany (Frankfurt am Main)

lat: 50.1109

lon: 8.68213

#8: IP: 213.198.82.214

Host: 213.198.82.214

ISP: NTT America, Inc. (NTT Europe, Ltd.)

Ping:

134 ms TTL: 50

134 ms TTL: 50

131 ms TTL: 50

Denmark (Ballerup Municipality)

lat: 55.7327

lon: 12.3656

#9: IP: 104.244.42.193

Host: 104.244.42.193

ISP: Twitter Inc. (Twitter Inc)

Ping:

156 ms TTL: 48

United States (San Francisco)
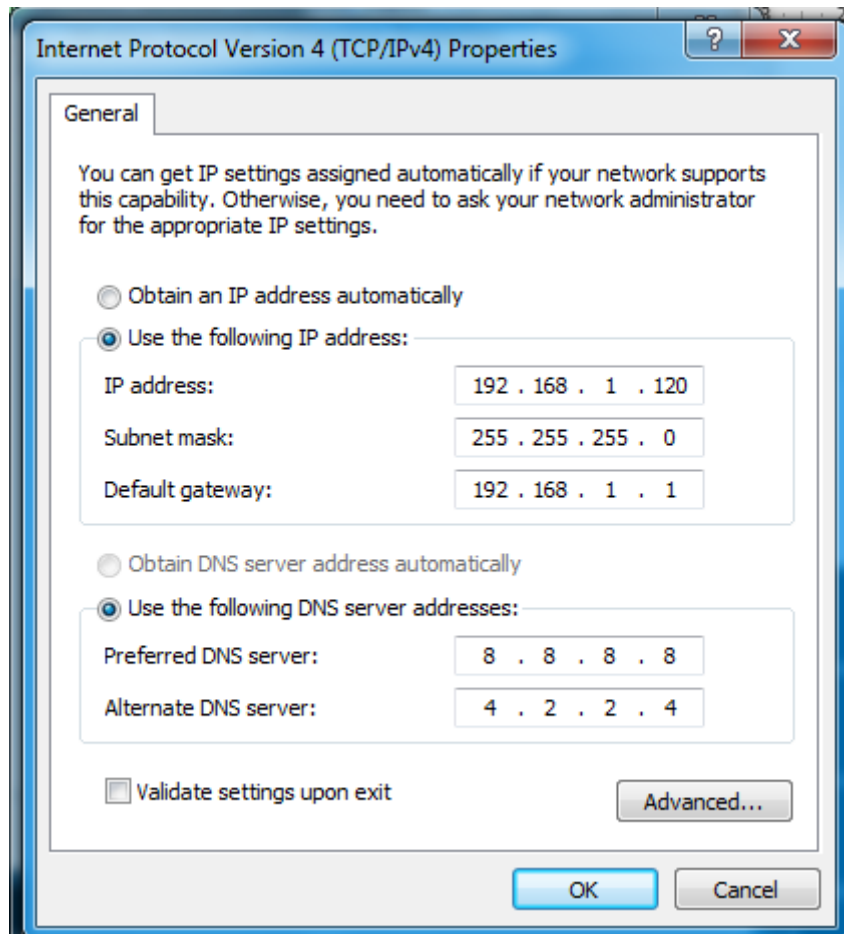
lat: 37.7768

lon: -122.416

۲) ping کردن لب تاب با گوشی

۳) تبدیل آدرس کامپیوتر از حالت دینامیک به استاتیک

همان طور که در شکل زیر مشاهده می شود، اینترنت برای مدتی قطع می شود و مجددا وصل میشود.

۳-۲) تغییر DNS server

```
Reply from 8.8.8.8: bytes=32 time=86ms TTL=106
Reply from 8.8.8.8: bytes=32 time=88ms TTL=106
Reply from 8.8.8.8: bytes=32 time=89ms TTL=106
Reply from 8.8.8.8: bytes=32 time=86ms TTL=106
Reply from 8.8.8.8: bytes=32 time=87ms TTL=106
Reply from 8.8.8.8: bytes=32 time=86ms TTL=106
Reply from 8.8.8.8: bytes=32 time=152ms TTL=106
Reply from 8.8.8.8: bytes=32 time=86ms TTL=106
Reply from 8.8.8.8: bytes=32 time=87ms TTL=106
Reply from 8.8.8.8: bytes=32 time=86ms TTL=106
Reply from 8.8.8.8: bytes=32 time=88ms TTL=106
Reply from 8.8.8.8: bytes=32 time=86ms TTL=106
Reply from 8.8.8.8: bytes=32 time=88ms TTL=106
Reply from 8.8.8.8: bytes=32 time=87ms TTL=106
Reply from 8.8.8.8: bytes=32 time=87ms TTL=106
Reply from 8.8.8.8: bytes=32 time=87ms TTL=106
```

۳-۳) مشاهده ip در حالت داینامیک و استاتیک

```
Wireless LAN adapter Wireless Network Connection:

   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . . : Atheros AR5BWB222 Wireless Network Adapte
r
   Physical Address. . . . . . . . . : F4-B7-E2-A4-48-E9
   DHCP Enabled. . . . . . . . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes
   Link-local IPv6 Address . . . . . : fe80::b4fe:573e:f032:1c67%14(Preferred)
   IPv4 Address. . . . . . . . . . . : 192.168.1.104(Preferred)
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Lease Obtained. . . . . . . . . . : ƒ0Ü-áΠfÿ, Ωn 05, 2021 12:49:13 á.Γ
   Lease Expires . . . . . . . . . . : ƒ0½áó, Ωn 08, 2021 12:49:13 á.Γ
   Default Gateway . . . . . . . . . : 192.168.1.1
   DHCP Server . . . . . . . . . . . : 192.168.1.1
   DHCPv6 IAID . . . . . . . . . . . : 351582178
   DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-23-3F-B6-47-20-89-84-5B-AF-EF

   DNS Servers . . . . . . . . . . . : fe80::5e51:81ff:fe0a:5a6d%14
                                       192.168.1.1
   NetBIOS over Tcpip. . . . . . . . : Enabled
```

```
Wireless LAN adapter Wireless Network Connection:

   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . . : Atheros AR5BWB222 Wireless Network Adapte
r
   Physical Address. . . . . . . . . : F4-B7-E2-A4-48-E9
   DHCP Enabled. . . . . . . . . . . : No
   Autoconfiguration Enabled . . . . : Yes
   Link-local IPv6 Address . . . . . : fe80::b4fe:573e:f032:1c67%14(Preferred)
   IPv4 Address. . . . . . . . . . . : 192.168.1.120(Preferred)
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . : 192.168.1.1
   DHCPv6 IAID . . . . . . . . . . . : 351582178
   DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-23-3F-B6-47-20-89-84-5B-AF-EF

   DNS Servers . . . . . . . . . . . : fe80::5e51:81ff:fe0a:5a6d%14
                                       8.8.8.8
                                       4.2.2.4
   NetBIOS over Tcpip. . . . . . . . : Enabled
```