

**Instructions:**

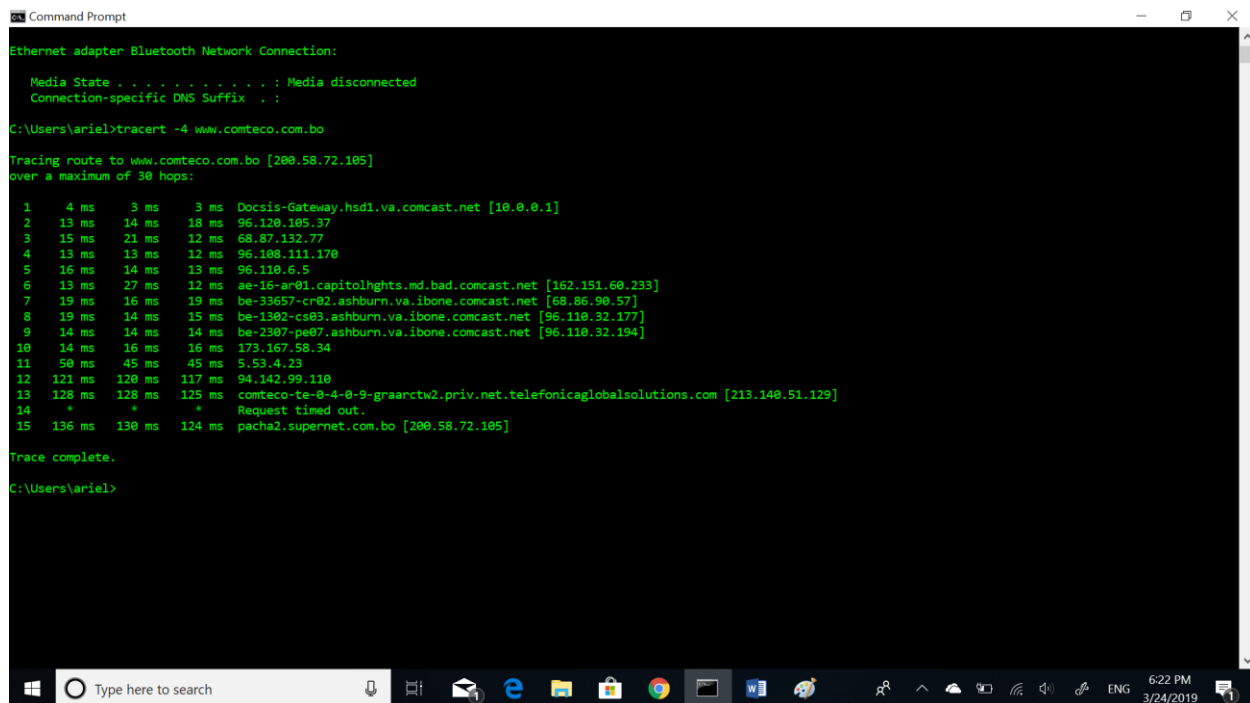
In this lab, you'll be using the traceroute diagnostic tool to packets route across the IP network.

**On Windows:**

- Go to Command Prompt (start menu, search for "cmd")
- Type: "tracert [www.comteco.com.bo](http://www.comteco.com.bo)"
- Take a full screenshot of your tracert result page

**On Mac:**

- Go to Terminal (Finder, Applications, Utilities and open "terminal")
- Type: "traceroute [www.webawards.com.au](http://www.webawards.com.au)"
- Take a full screenshot of your traceroute result page.



```
Command Prompt

Ethernet adapter Bluetooth Network Connection:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

C:\Users\ariel>tracert -4 www.comteco.com.bo

Tracing route to www.comteco.com.bo [200.58.72.105]
over a maximum of 30 hops:

  0  4 ms   3 ms   3 ms  Docsis-Gateway.hsd1.va.comcast.net [10.0.0.1]
  1  13 ms  14 ms  18 ms  96.120.105.37
  2  15 ms  21 ms  12 ms  68.87.132.77
  3  13 ms  13 ms  12 ms  96.108.111.170
  4  16 ms  14 ms  13 ms  96.110.6.5
  5  13 ms  27 ms  12 ms  ae-16-ar01.capitolhghts.md.bad.comcast.net [162.151.60.233]
  6  19 ms  16 ms  19 ms  be-33657-cr02.ashburn.va.ibone.comcast.net [68.86.90.57]
  7  19 ms  14 ms  15 ms  be-1302-cs03.ashburn.va.ibone.comcast.net [96.110.32.177]
  8  14 ms  14 ms  14 ms  be-2307-pe07.ashburn.va.ibone.comcast.net [96.110.32.194]
  9  14 ms  16 ms  16 ms  173.167.58.34
 10  50 ms  45 ms  45 ms  5.53.4.23
 11  121 ms 120 ms 117 ms  94.142.99.110
 12  128 ms 128 ms 125 ms  comteco-te-0-4-0-9-graarcw2.priv.net.telefonicaglobalsolutions.com [213.140.51.129]
 13      *      *      *      Request timed out.
 14      *      *      *      Request timed out.
 15  136 ms 130 ms 124 ms  pacha2.supernet.com.bo [200.58.72.105]

Trace complete.

C:\Users\ariel>
```

**Questions:**

1. What is your computers IP address? (This is not included in your traceroute results). **Take a screenshot of your computers IP address. Your screenshot should indicate the time and date on your computer.**

IP address: 10.0.0.3

```
Command Prompt
C:\Users\ariel>ipconfig

Windows IP Configuration

Wireless LAN adapter Local Area Connection* 1:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Wireless LAN adapter Local Area Connection* 2:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Wireless LAN adapter Wi-Fi:

    Connection-specific DNS Suffix  . : hsd1.va.comcast.net
    IPv6 Address. . . . . : 2601:140:8100:88fe::98ad
    IPv6 Address. . . . . : 2601:140:8100:88fe:b4c9:bdea:e111:c8c6
    Temporary IPv6 Address. . . . . : 2601:140:8100:88fe:70b9:aca0:a7ae:9668
    Link-local IPv6 Address . . . . . : fe80::b4c9:bdea:e111:c8c6%17
    IPv4 Address. . . . . : 10.0.0.3
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : fe80::f60e:83ff:fed5:1245%17
                                10.0.0.1

Ethernet adapter Bluetooth Network Connection:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

C:\Users\ariel>
```

**2. With reference to private/public IP addresses. What type of IP address is the first IP from your traceroute result.**

The first IP address (10.0.0.1) is a **private** IP address.

The range of the IP addresses are:

10.0.0.0 to 10.255.255.255

172.16.0.0 to 172.31.255.255

192.168.0.0 to 192.168.255.255

```
Command Prompt

Ethernet adapter Bluetooth Network Connection:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

C:\Users\ariel>tracert -4 www.comteco.com.bo

Tracing route to www.comteco.com.bo [200.58.72.105]
over a maximum of 30 hops:

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  1 13 ms 14 ms 18 ms 96.120.105.37
  2 15 ms 21 ms 12 ms 68.87.132.77
  3 13 ms 13 ms 12 ms 96.108.111.170
  4 16 ms 14 ms 13 ms 96.110.6.5
  5 13 ms 27 ms 12 ms ae-16-ar01.capitolhghts.md.bad.comcast.net [162.151.60.233]
  6 19 ms 16 ms 19 ms be-33657-cr02.ashburn.va.ibone.comcast.net [68.86.90.57]
  7 19 ms 14 ms 15 ms be-1302-cs03.ashburn.va.ibone.comcast.net [96.110.32.177]
  8 14 ms 14 ms 14 ms be-2307-pe07.ashburn.va.ibone.comcast.net [96.110.32.194]
  9 14 ms 16 ms 16 ms 173.167.58.34
 10 50 ms 45 ms 45 ms 5.53.4.23
 11 121 ms 120 ms 117 ms 94.142.99.110
 12 128 ms 128 ms 125 ms comteco-te-0-4-0-9-graarcw2.priv.net.telefonicaglobalsolutions.com [213.140.51.129]
 13 * * * Request timed out.
 14 * * * Request timed out.
 15 136 ms 130 ms 124 ms pacha2.supernet.com.bo [200.58.72.105]

Trace complete.

C:\Users\ariel>
```

3. With reference to private/public IP addresses. What type of IP address is the second IP from your traceroute result.

The second IP address (96.120.105.37) is a **public** IP address

```
Command Prompt

Ethernet adapter Bluetooth Network Connection:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

C:\Users\ariel>tracert -4 www.comteco.com.bo

Tracing route to www.comteco.com.bo [200.58.72.105]
over a maximum of 30 hops:

  0  4 ms  3 ms  3 ms  Docsis-Gateway.hsd1.va.comcast.net [10.0.0.1]
  1 13 ms 14 ms 18 ms 96.120.105.37
  2 15 ms 21 ms 12 ms 68.87.132.77
  3 13 ms 13 ms 12 ms 96.108.111.170
  4 16 ms 14 ms 13 ms 96.110.6.5
  5 13 ms 27 ms 12 ms ae-16-ar01.capitolhghts.md.bad.comcast.net [162.151.60.233]
  6 19 ms 16 ms 19 ms be-33657-cr02.ashburn.va.ibone.comcast.net [68.86.90.57]
  7 19 ms 14 ms 15 ms be-1302-cs03.ashburn.va.ibone.comcast.net [96.110.32.177]
  8 14 ms 14 ms 14 ms be-2307-pe07.ashburn.va.ibone.comcast.net [96.110.32.194]
  9 14 ms 16 ms 16 ms 173.167.58.34
 10 50 ms 45 ms 45 ms 5.53.4.23
 11 121 ms 120 ms 117 ms 94.142.99.110
 12 128 ms 128 ms 125 ms comteco-te-0-4-0-9-graarcw2.priv.net.telefonicaglobalsolutions.com [213.140.51.129]
 13 * * * Request timed out.
 14 * * * Request timed out.
 15 136 ms 130 ms 124 ms pacha2.supernet.com.bo [200.58.72.105]

Trace complete.

C:\Users\ariel>
```

4. In a tabular format (use table example below), and in sequential order. Indicate the location of each IP address (include state for US states) and the organization that owns the IP address. (Use <https://www.ultratools.com/tools/ipWhoisLookup> to look up IP address whois information). Add a row for every single IP in your traceroute result page.

Hop count	IP address	Organization (IP Owner)	Location (US state)/Country
1	10.0.0.1	Internet Assigned Numbers Authority	Address: 12025 Waterfront Drive Suite 300 City: Los Angeles State/Province: CA Country: United States
2	96.120.105.37	Comcast IP Services, L.L.C.	Address: 1800 Bishops Gate Blvd City: Mt Laurel State/Province: NJ Country: United States
3	68.87.132.77	Comcast Cable Communications, Inc.	Address: 1800 Bishops Gate Blvd City: Mt Laurel State/Province: NJ Country: United States
4	96.108.111.170	Comcast Cable Communications, LLC	Address: 1800 Bishops Gate Blvd City: Mt Laurel State/Province: NJ Country: United States
5	96.110.6.5	Comcast Cable Communications, LLC	Address: 1800 Bishops Gate Blvd City: Mt Laurel State/Province: NJ Country: United States
6	162.151.60.233	Comcast Cable Communications, LLC	Address: 1800 Bishops Gate Blvd City: Mt Laurel State/Province: NJ Country: United States
7	68.86.90.57	Comcast Cable Communications, Inc	Address: 1800 Bishops Gate Blvd City: Mt Laurel State/Province: NJ Country: United States
8	96.110.32.177	Comcast Cable Communications, Inc.	Address: 1800 Bishops Gate Blvd City: Mt Laurel State/Province: NJ Country: United States
9	96.110.32.194	Comcast Cable Communications, LLC	Address: 1800 Bishops Gate Blvd City: Mt Laurel State/Province: NJ Country: United States
10	173.167.58.34	Comcast Cable Communications, LLC	Address: 1800 Bishops Gate Blvd City: Mt Laurel State/Province: NJ Country: United States
11	5.53.4.23	Telefonica International Wholesale Services II, S.L.U.	Address: Cl Ronda de la Comunicacion s/n, Edificio Oeste 3, Planta 2 State/Province: Madrid Country: SPAIN
12	94.142.99.110	Telefonica International Wholesale Services II, S.L.U.	Address: Cl Ronda de la Comunicacion s/n, Edificio Oeste 3, Planta 2 State/Province: Madrid Country: SPAIN

13	213.140.51.129	Telefonica International Wholesale Network TIWS Infrastructure	Address: Cl Ronda de la Comunicacion s/n, Edificio Oeste 3, Planta 2 State/Province: Madrid Country: SPAIN
14	Request Time out		
15	200.58.72.105	Comteco Ltda	Address: 705 Av. Ballivian, 705 State/Province: Cochabamba Country: Bolivia

**5. In your own words, explain everything you just did, and what route did your packet took from source to destination. How many US states did your packet go through? How many countries if any?**

Using the command 'tracert', I sent a packet of information to the website [www.comteco.com.bo](http://www.comteco.com.bo) and it showed me the path that this packet took to reach its destination.

According to the results, the packet did 15 hops. First, it went to Los Angeles-California, then to Mt Laurel-New Jersey, then the packet stayed in New Jersey for 9 hops. The first 10 hops were inside the United States. After the 10<sup>th</sup> hop, the packet went to Madrid-Spain. The packet stayed in there for two hops more. After that, the packet did one hop that couldn't be identified for the tracert tool. For the last hop, the packet went to Cochabamba-Bolivia reaching its destination.

The packet went through two states in United States (3 states if we count the origin of the packet, Virginia), one state in Spain and one department in Bolivia.