

LAB # 02

TASK 1: Run the following commands on the command prompt of your PCs and attach snapshots of the result:

- i. ping www.google.com
- ii. tracert www.yahoo.com
- iii. ping -i 6 www.facebook.com, did you receive the correct reply? If not, explain why.
- iv. nslookup www.live.com, did you result show 'Non-authoritative answer'? If yes, explain what does it indicate, you are advised to browse the internet to attain this answer.

SOLUTION :

- i) ping www.google.com :

```
C:\Windows\system32>ping www.google.com

Pinging www.google.com [142.250.66.4] with 32 bytes of data:
Reply from 142.250.66.4: bytes=32 time=315ms TTL=114
Reply from 142.250.66.4: bytes=32 time=313ms TTL=114
Reply from 142.250.66.4: bytes=32 time=313ms TTL=114
Reply from 142.250.66.4: bytes=32 time=315ms TTL=114

Ping statistics for 142.250.66.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 313ms, Maximum = 315ms, Average = 314ms
```

- ii) tracert www.yahoo.com :

```
C:\Windows\system32>tracert www.yahoo.com

Tracing route to new-fp-shed.wg1.b.yahoo.com [87.248.100.216]
over a maximum of 30 hops:

  0  6 ms   2 ms   1 ms  192.168.100.1
  1  2 ms   1 ms   2 ms  192.168.40.1
  2  3 ms   4 ms   3 ms  125-209-85-145.multi.net.pk [125.209.85.145]
  3  3 ms   6 ms   9 ms  202.141.224.10
  4  6 ms   6 ms   6 ms  119.159.224.229
  5  5 ms   5 ms   4 ms  10.253.4.48
  6  5 ms   5 ms   4 ms  10.253.4.4
  7 115 ms 112 ms 114 ms ge-1-3-0.pat1.dee.yahoo.com [80.81.192.115]
  8 130 ms 132 ms 137 ms ae-3.pat1.frz.yahoo.com [209.191.112.17]
  9 149 ms 150 ms 149 ms ae-2.pat1.iry.yahoo.com [209.191.112.54]
 10 148 ms 148 ms 149 ms unknown.yahoo.com [209.191.112.133]
 11 150 ms 146 ms 149 ms lo0.fab3-1-gdc.ir2.yahoo.com [77.238.190.4]
 12 146 ms 147 ms 147 ms usw1-1-lbc.ir2.yahoo.com [77.238.190.106]
 13 152 ms 159 ms 148 ms media-router-fp74.prod.media.vip.ir2.yahoo.com [87.248.100.216]

Trace complete.
```

iii) ping -i 6 www.facebook.com :

```
C:\Windows\system32>ping -i 6 www.facebook.com

Pinging star-mini.c10r.facebook.com [157.240.227.35] with 32 bytes of data:
Reply from 10.253.4.48: TTL expired in transit.
Reply from 10.253.4.48: TTL expired in transit.
Reply from 10.253.4.48: TTL expired in transit.
Reply from 10.253.4.48: TTL expired in transit.

Ping statistics for 157.240.227.35:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
```

Reason :

The TTL is expired because we have given less number of TTL in the command ping -I 6 of www.facebook.com. The required TTL for www.facebook.com is 10.

iv) nslookup www.live.com :

```
C:\Windows\system32>nslookup www.live.com
Server:   one.one.one.one
Address:  1.1.1.1

Non-authoritative answer:
Name:     a-0010.a-msedge.net
Addresses: 2620:1ec:c11::212
          204.79.197.212
Aliases:  www.live.com
          outlook-fd-0010.live.com
```

Reason :

Non-authoritative answers means that the DNS server that answered your query isn't authoritative for the zone that you're requesting. This is what most results return, since probably receiving data cached from your local DNS servers. Because a nameserver not in the list for the domain we did a lookup on.

TASK 2: Differentiate between Ping and PathPing commands.

SOLUTION :

PING:

The ping command verifies connections to remote computer or computers, by sending ICMP echo packets to the computer and listening for echo reply packets. Ping waits for up to 1 second for each packet sent and prints the number of packets transmitted and received. Each received packet is validated against the transmitted message. By default, four echo packets containing 64 bytes of Computer (a periodic uppercase sequence of alphabetic characters) are transmitted.

You can use the ping utility to test both the computer name and the IP address of the computer. If the IP address is verified but the computer name is not, you may have a name resolution problem. In this case, be sure that the computer name you are querying is in either the local HOSTS file or in the DNS Computerbase.

The Ping stands for Packet Internet Groper.

PATH PING:

The Path Ping command is a command-line network utility supplied in Windows 2000 and beyond that combines the functionality of ping with that of tracert. It is used to locate spots that have network latency and network loss.

TASK 3: Find all Active/ Used IP addresses on your network.

SOLUTION :

```
Ethernet adapter Ethernet 4:

Connection-specific DNS Suffix  . : ns.bugw.local
Description . . . . . : Intel(R) Ethernet Connection (11) I219-LM
Physical Address. . . . . : 50-81-40-7A-D9-F2
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::b4e7:8c06:3685:38bb%14(Preferred)
IPv4 Address. . . . . : 10.10.3.217(Preferred)
Subnet Mask . . . . . : 255.255.252.0
Lease Obtained. . . . . : Thursday, October 6, 2022 11:30:21 AM
Lease Expires . . . . . : Friday, October 7, 2022 11:30:20 AM
Default Gateway . . . . . : fe80::16d6:4dff:fe36:f882%14
                             10.10.0.1
DHCP Server . . . . . : 192.168.8.8
DHCPv6 IAID . . . . . : 525369664
DHCPv6 Client DUID. . . . . : 00-01-00-01-29-12-8F-82-18-60-24-AC-BC-C1
DNS Servers . . . . . : 10.10.0.3
NetBIOS over Tcpip. . . . . : Enabled
```

TASK 4: How to verify connection with remote computer?

SOLUTION :

```
C:\Users\Spring2020>ping 10.10.3.218

Pinging 10.10.3.218 with 32 bytes of data:
Reply from 10.10.3.218: bytes=32 time=1ms TTL=128
Reply from 10.10.3.218: bytes=32 time=2ms TTL=128
Reply from 10.10.3.218: bytes=32 time=1ms TTL=128
Reply from 10.10.3.218: bytes=32 time=2ms TTL=128

Ping statistics for 10.10.3.218:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 2ms, Average = 1ms
```