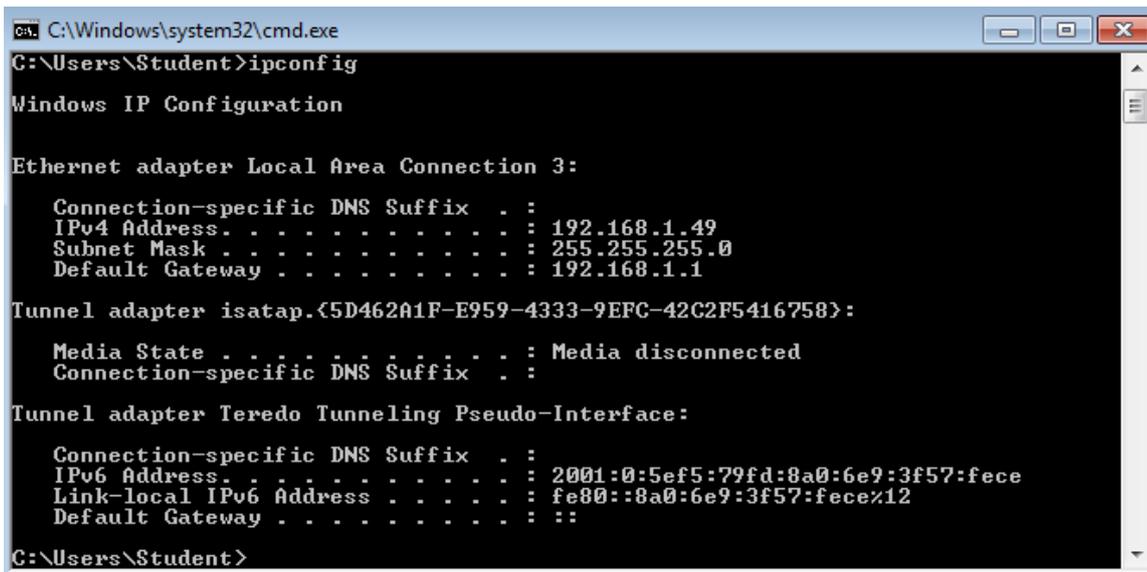# TROUBLESHOOTING NETWORK WITH MS-DOS

1. ipconfig – Quickly Find Your IP Address

You can find your IP address from the Control Panel, but this takes quite a few clicks. The ipconfig command is a fast way of determining your computer's IP address and other information, such as the address of its default gateway — useful if you want to know the IP address of your router's web interface. To use the command, just type **ipconfig** into a Command Prompt window. You'll see a list of all the network connections your computer is using. Look under Wireless LAN adapter if you're connected to Wi-Fi or Ethernet adapter Local Area Connection if you're connected to a wired network.
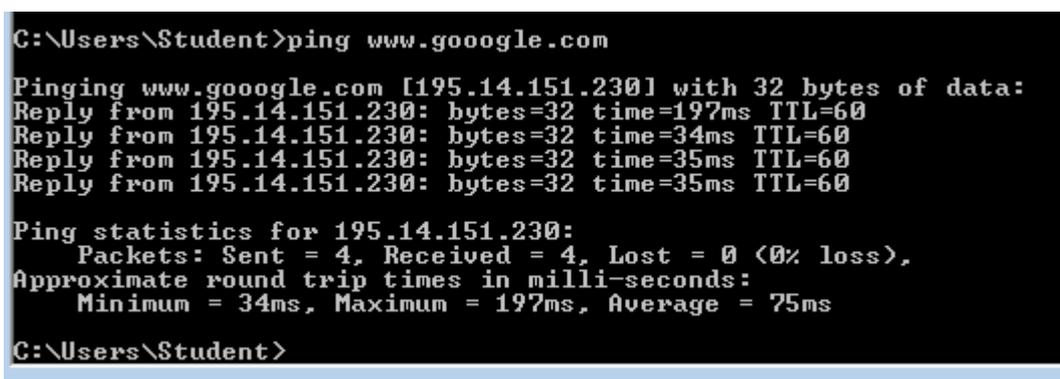

2. ping - Troubleshoot Network Connection Issues (point to point)

3. tracert – Troubleshoot Network Connection Issues (shows path to destination)

If you're experiencing issues connecting to a website or other network connection issues, Windows and other operating systems have some standard tools you can use to identify problems.

First, there's the ping command. Type **ping google.com** and Windows will send packets to Google.com. Google will respond and let you know it's received them. You'll be able to see if any packets didn't make it to Google.com — perhaps you're experiencing packet loss — and how long it took you to hear back — perhaps the network is saturated and packets are taking a while to reach their destinations. **If this fails try to ping your default gateway or the loopback.**

Dimitris Mavrovouniotis

```
C:\Users\Student>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:
Reply from 192.168.1.1: bytes=32 time=1ms TTL=64
Reply from 192.168.1.1: bytes=32 time=1ms TTL=64
Reply from 192.168.1.1: bytes=32 time=1ms TTL=64
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

```
C:\Users\Student>ping 127.0.0.1

Pinging 127.0.0.1 with 32 bytes of data:
Reply from 127.0.0.1: bytes=32 time<1ms TTL=128
Reply from 127.0.0.1: bytes=32 time<1ms TTL=128
Reply from 127.0.0.1: bytes=32 time<1ms TTL=128
Reply from 127.0.0.1: bytes=32 time<1ms TTL=128

Ping statistics for 127.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

There's also the tracert command, which traces the route it takes for a packet to reach a destination. For example, run **tracert google.com** and you'll see the path your packet takes to reach Google. If you're having issues connecting to a website, tracert can show you where the problem is occurring.

```
C:\Users\Student>tracert www.google.com

Tracing route to www.google.com [195.14.151.251]
over a maximum of 30 hops:

  1     1 ms     1 ms     1 ms  CISCO [192.168.1.1]
  2    34 ms    35 ms    35 ms  81-171-165.netrunb.cytanet.com.cy [81.4.171.165]

  3    35 ms    34 ms    35 ms  195.14.158.114
  4    33 ms    35 ms    35 ms  te4-7-lyk6-cyta-ip.net [195.14.128.137]
  5    33 ms    35 ms    35 ms  195.14.151.251

Trace complete.

C:\Users\Student>
```

For more information about using these commands, read our introduction to troubleshooting Internet connection problems.

4. Route print - Shows routing table

```
C:\Windows\system32\cmd.exe                                          [_][□][✕]
C:\Users\Student>route print
===========================================================================
Interface List
 16...a0 b3 cc f9 8b ca ......Intel(R) 82579LM Gigabit Network Connection #2
  1...........................Software Loopback Interface 1
 11...00 00 00 00 00 00 00 e0 Microsoft ISATAP Adapter
 12...00 00 00 00 00 00 00 e0 Teredo Tunneling Pseudo-Interface
===========================================================================

IPv4 Route Table
===========================================================================
Active Routes:
Network Destination        Netmask          Gateway       Interface  Metric
          0.0.0.0          0.0.0.0      192.168.1.1    192.168.1.49    276
        127.0.0.0        255.0.0.0         On-link        127.0.0.1    306
        127.0.0.1  255.255.255.255         On-link        127.0.0.1    306
  127.255.255.255  255.255.255.255         On-link        127.0.0.1    306
      192.168.1.0    255.255.255.0         On-link     192.168.1.49    276
     192.168.1.49  255.255.255.255         On-link     192.168.1.49    276
    192.168.1.255  255.255.255.255         On-link     192.168.1.49    276
        224.0.0.0        240.0.0.0         On-link        127.0.0.1    306
        224.0.0.0        240.0.0.0         On-link     192.168.1.49    276
  255.255.255.255  255.255.255.255         On-link        127.0.0.1    306
  255.255.255.255  255.255.255.255         On-link     192.168.1.49    276
===========================================================================
```

5. Net stat- Shows active connections