CLARK COLLINS

ITC 250 LABORATORY REPORT – HW 2

INTRODUCTION:

This lab report covers the steps necessary to perform network troubleshooting using open source and built in operating system tools. This report lays out the necessary equipment and software to perform the steps of these processes. The steps are laid out in order and should be able to be followed by anyone old enough to read and follow directions.Good!

OBJECTIVE:

The purpose of this lab is to learn basic syntax for Windows and/or Unix commands. By following this procedure, you will be able to better manage and maintain your company's network. The beginning of this report goes over good open source tools that can be used to analyze network traffic. It is vital to know what data and devices are on your network in order to ensure proper security. By the end of this lab you will be able to tell what devices are connected to the network and when they are sending and receiving data. Good!

EQUIPMENT LIST:

The following equipment is required to perform this lab:

1. A Windows or Unix computer running ideally Windows Vista or higher and at least Unix (Mac OSX version 10.0 and above.
2. Administrative access to the machine is required.
3. Keyboard/Mouse
4. Internet connectivity (wired or wireless)

ACTIVITY 1:

Selecting network analyzing tools.

After looking at more than a dozen network tools, I have gone over the list and picked out the ones that I personally fine the most user-friendly, robust, and ideally, open source. Below you will find a spreadsheet listing my findings.

Product	Cost	Details	My Ranking (1-10) Higher is Better
Wireshark	Free or Paid	One of the most powerful, still considered a network tool standard by many in the IT field.	8, no longer entirely free, but still offers many great features such as
Angry IP Scanner	OpenSource	Offers portable edition, ping checks, NetBIOS info, hostname resolutions	7, less overall features than Wireshark, but entirely free
JDSU Network Analyzer	Tiered model, with a free base edition	In depth network analysis on top of everything that Wireshark and Angry IP offer. Scalable as well.	9, Great UI, tons of features, can get costly.
Microsoft Network Monitor	Free	Made by Microsoft, offers similar functions as the others, but not as scalable like JDSU for larger networks.	7, Free with limited functionality. Other tools offer better UI.

Good!

BLOCK DIAGRAM:

Not Applicable to this Report.

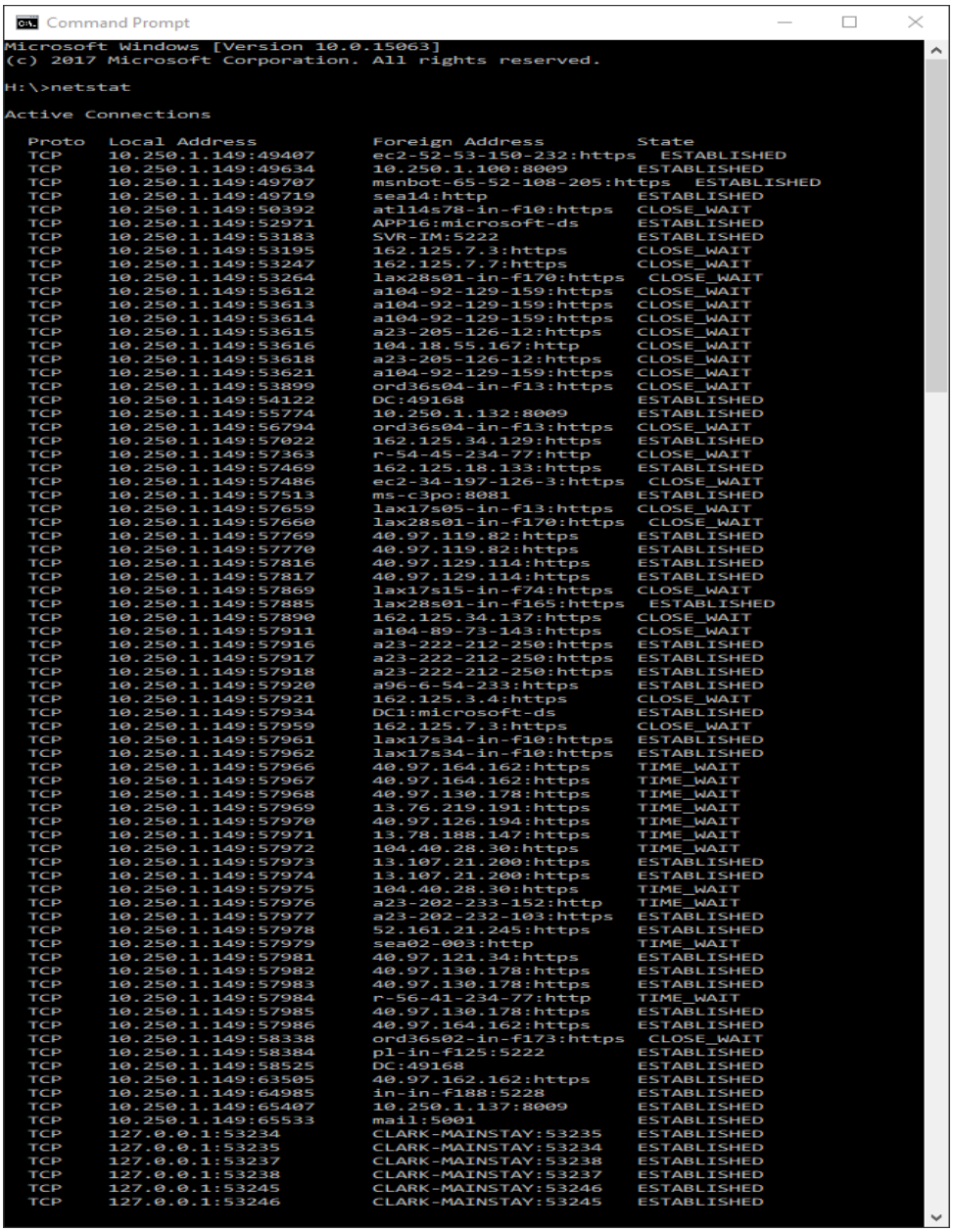
ACTIVITY 2 PROCEDURE:

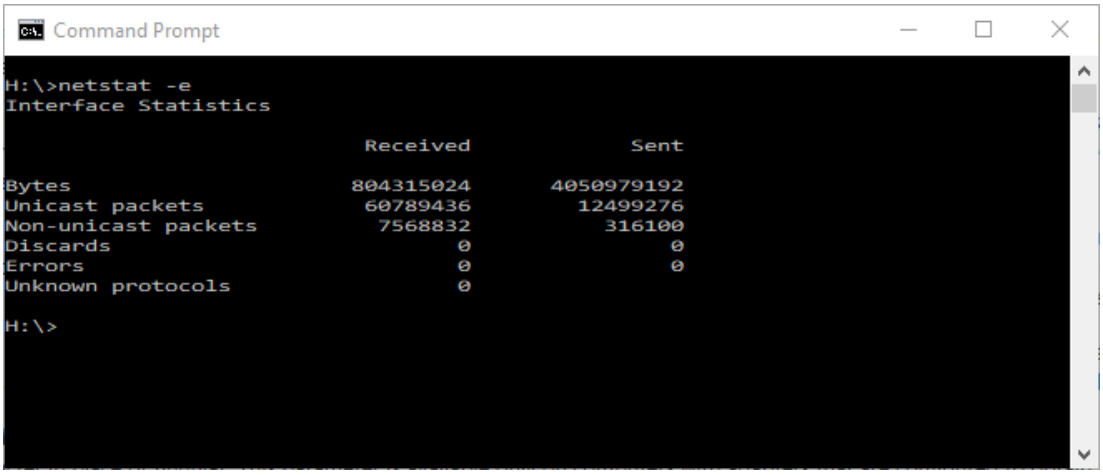
1) Begin by opening your start menu and typing in run.exe. You can also use the hotkey WIN+R to open the run command. A third option is to type cmd in the start menu of Windows if you are on Windows 7-10.
2) **Activity 2A**
   a) Type these commands into the command prompt and use your tool of choice (windows snipping tool is built into windows Vista through Windows 10, it is available in the start menu by typing "Snipping Tool" This will allow you to save images of what you have run in the command prompt)
      i) Netstat
      ii) Netstat -e
      iii) Netstat ?
      iv) Netstat -rn

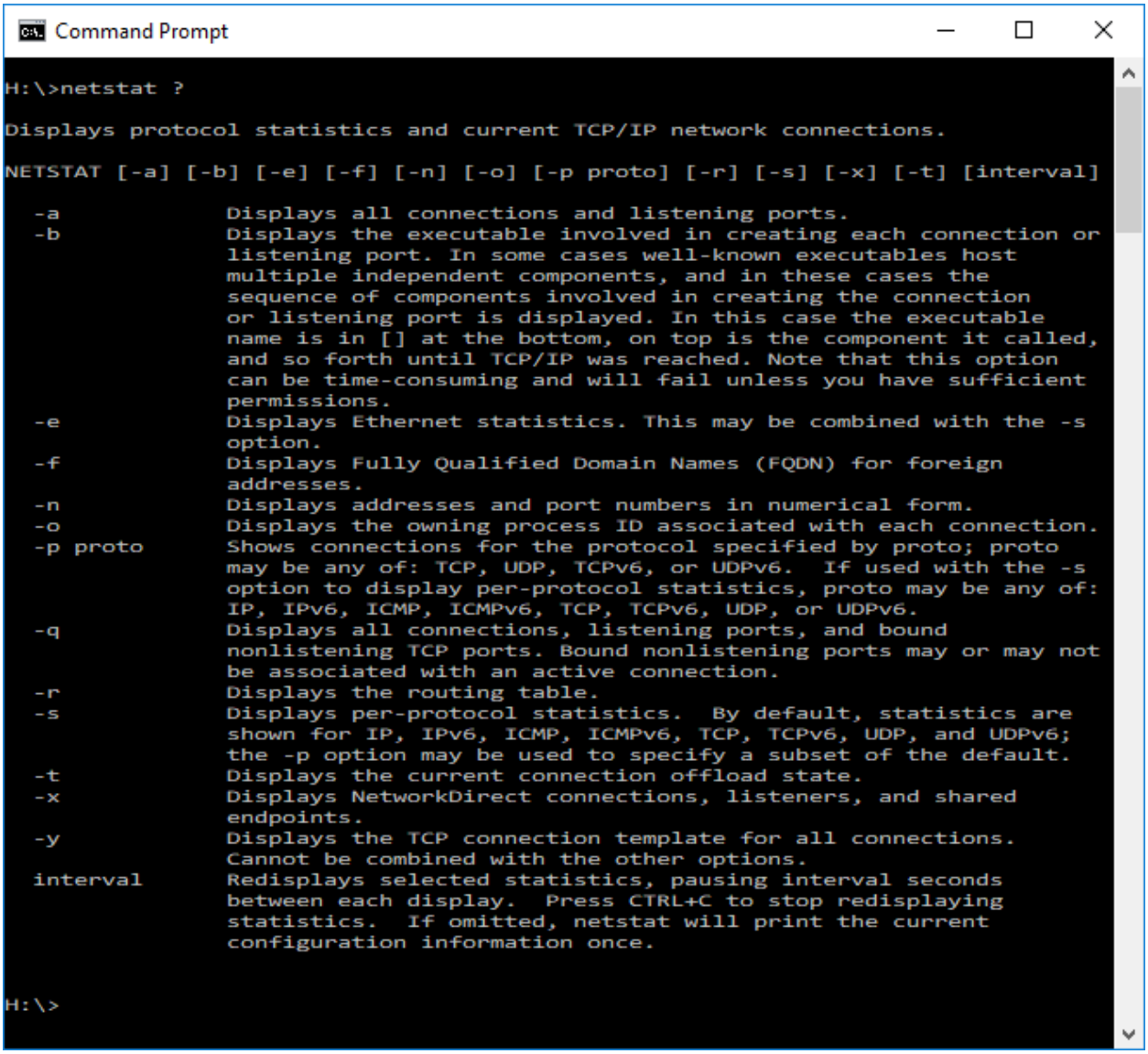
3) **Activity 2B**
   a) The same process as Activity 2A Applies here. Type these commands into the command prompt and take printscreens of the results.
      i) ipconfig /all
      ii) ipconfig /renew
      iii) ipconfig /release
      iv) ipconfig /flushdns
      v) ipconfig /displaydns
      vi) ipconfig /registerdns
      vii) ipconfig /showclassid
      viii) ipconfig /setclassid
4) **Activity 2C**
   a) Follow the same process as the previous 2 typing these commands and saving/logging the results
      i) Ping www.mit.edu
      ii) Ping -n 10 www.mit.edu
      iii) Ping www.microsoft.edu
      iv) Ping www.ucla.edu
      v) Ping www.Purdue.edu
5) **Activity 2D**
   a) Follow the same process as the previous 3 typing these commands and saving/logging the results
      i) Arp-a
6) **Activity 2E**
   a) Follow the same process as the previous 4 typing these commands and saving/logging the results
      i) Route
      ii) Route print
      iii) Route print -4
      iv) Route print -6
7) **Activity 2F**
   a) Follow the same process as the previous 5 typing these commands and saving/logging the results
      i) Tracert www.mit.edu
      ii) Tracert www.microsoft.edu
      iii) Tracert www.Purdue.edu
      iv) Tracert www.iu.edu

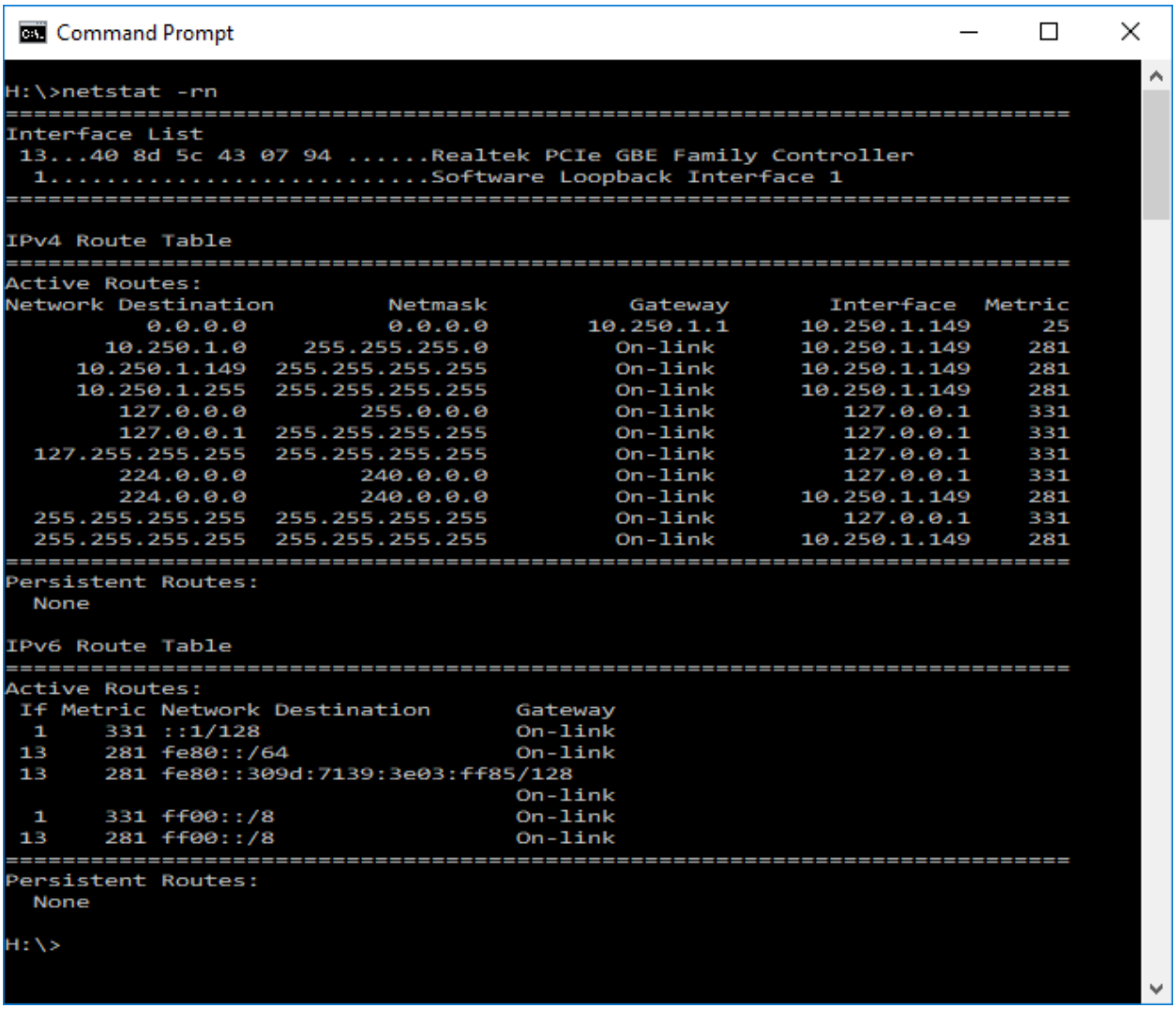
ACTIVITY 2A DATA:

The following screen captures link back directly to the commands in the procedure portion of this report. The “netstat” command shows the active connections between the PC and host and the related connection from that host. In my case, I am on my work PC so it shows the other connection on the network. The second image shows the “netstat -e” connection which displays what is currently connected to the LAN either wired or wireless. “Netstat ?” shows the common commands that can be used in conjunction with netstat. “Netstat -rn” displays the information for routing both on IPV6 and IPV4.




Command Prompt
H:\>netstat -e
Interface Statistics
Received Sent
Bytes 804315024 4050979192
Unicast packets 60789436 12499276
Non-unicast packets 7568832 316100
Discards 0 0
Errors 0 0
Unknown protocols 0
H:\>


Command Prompt
H:\>netstat ?
Displays protocol statistics and current TCP/IP network connections.
NETSTAT [-a] [-b] [-e] [-f] [-n] [-o] [-p proto] [-r] [-s] [-x] [-t] [interval]
-a Displays all connections and listening ports.
-b Displays the executable involved in creating each connection or listening port. In some cases well-known executables host multiple independent components, and in these cases the sequence of components involved in creating the connection or listening port is displayed. In this case the executable name is in [] at the bottom, on top is the component it called, and so forth until TCP/IP was reached. Note that this option can be time-consuming and will fail unless you have sufficient permissions.
-e Displays Ethernet statistics. This may be combined with the -s option.
-f Displays Fully Qualified Domain Names (FQDN) for foreign addresses.
-n Displays addresses and port numbers in numerical form.
-o Displays the owning process ID associated with each connection.
-p proto Shows connections for the protocol specified by proto; proto may be any of: TCP, UDP, TCPv6, or UDPv6. If used with the -s option to display per-protocol statistics, proto may be any of: IP, IPv6, ICMP, ICMPv6, TCP, TCPv6, UDP, or UDPv6.
-q Displays all connections, listening ports, and bound nonlistening TCP ports. Bound nonlistening ports may or may not be associated with an active connection.
-r Displays the routing table.
-s Displays per-protocol statistics. By default, statistics are shown for IP, IPv6, ICMP, ICMPv6, TCP, TCPv6, UDP, and UDPv6; the -p option may be used to specify a subset of the default.
-t Displays the current connection offload state.
-x Displays NetworkDirect connections, listeners, and shared endpoints.
-y Displays the TCP connection template for all connections. Cannot be combined with the other options.
interval Redisplays selected statistics, pausing interval seconds between each display. Press CTRL+C to stop redisplaying statistics. If omitted, netstat will print the current configuration information once.
H:\>


Command Prompt
H:\>netstat -rn
Interface List
13...40 8d 5c 43 07 94 ......Realtek PCIe GBE Family Controller
1...........................Software Loopback Interface 1
IPv4 Route Table
Active Routes:
Network Destination Netmask Gateway Interface Metric
0.0.0.0 0.0.0.0 10.250.1.1 10.250.1.149 25
10.250.1.0 255.255.255.0 On-link 10.250.1.149 281
10.250.1.149 255.255.255.255 On-link 10.250.1.149 281
10.250.1.255 255.255.255.255 On-link 10.250.1.149 281
127.0.0.0 255.0.0.0 On-link 127.0.0.1 331
127.0.0.1 255.255.255.255 On-link 127.0.0.1 331
127.255.255.255 255.255.255.255 On-link 127.0.0.1 331
224.0.0.0 240.0.0.0 On-link 127.0.0.1 331
224.0.0.0 240.0.0.0 On-link 10.250.1.149 281
255.255.255.255 255.255.255.255 On-link 127.0.0.1 331
255.255.255.255 255.255.255.255 On-link 10.250.1.149 281
Persistent Routes:
None
IPv6 Route Table
Active Routes:
If Metric Network Destination Gateway
1 331 ::1/128 On-link
13 281 fe80::/64 On-link
13 281 fe80::309d:7139:3e03:ff85/128
On-link
1 331 ff00::/8 On-link
13 281 ff00::/8 On-link
Persistent Routes:
None
H:\>

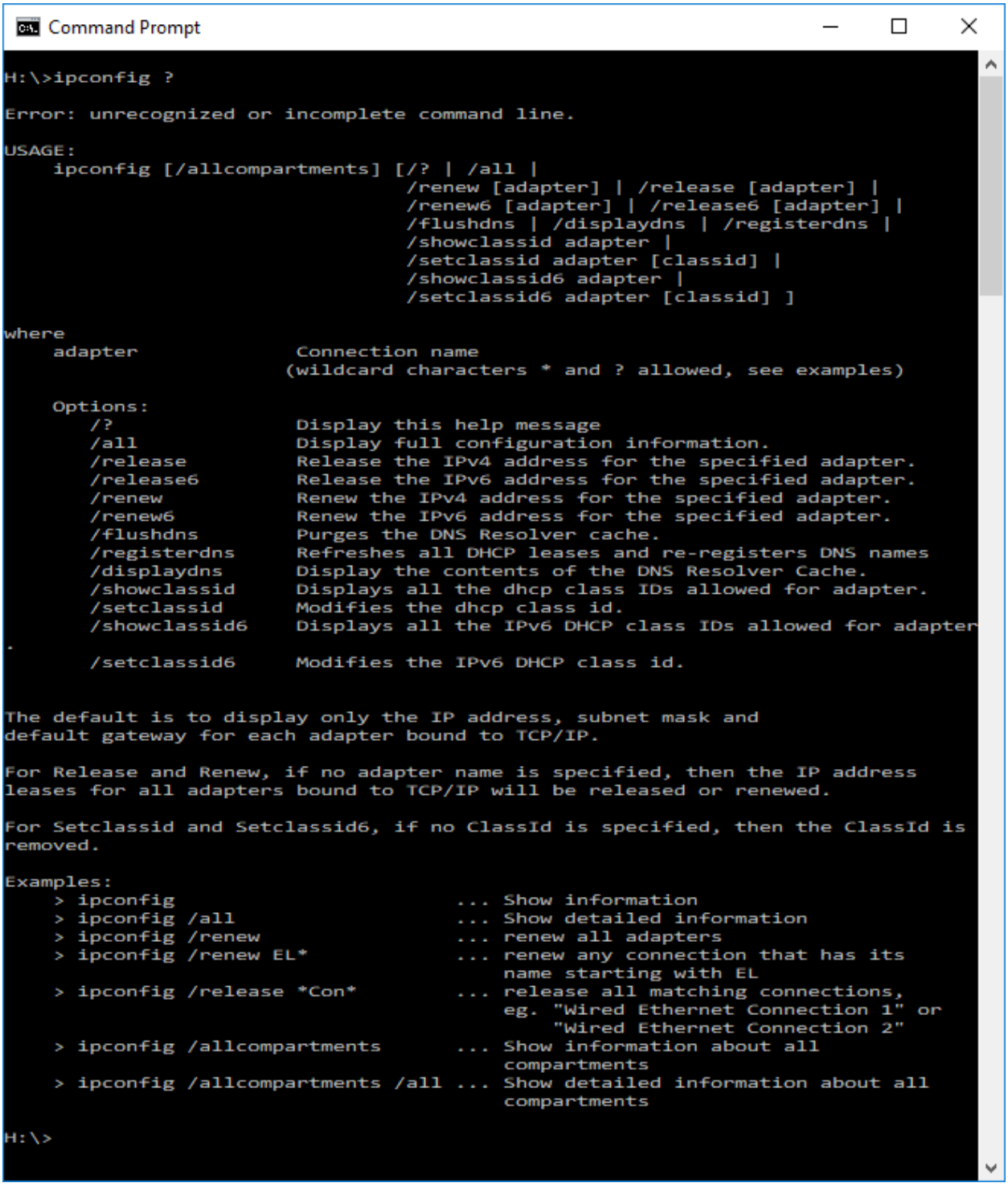
ACTIVITY 2B DATA:

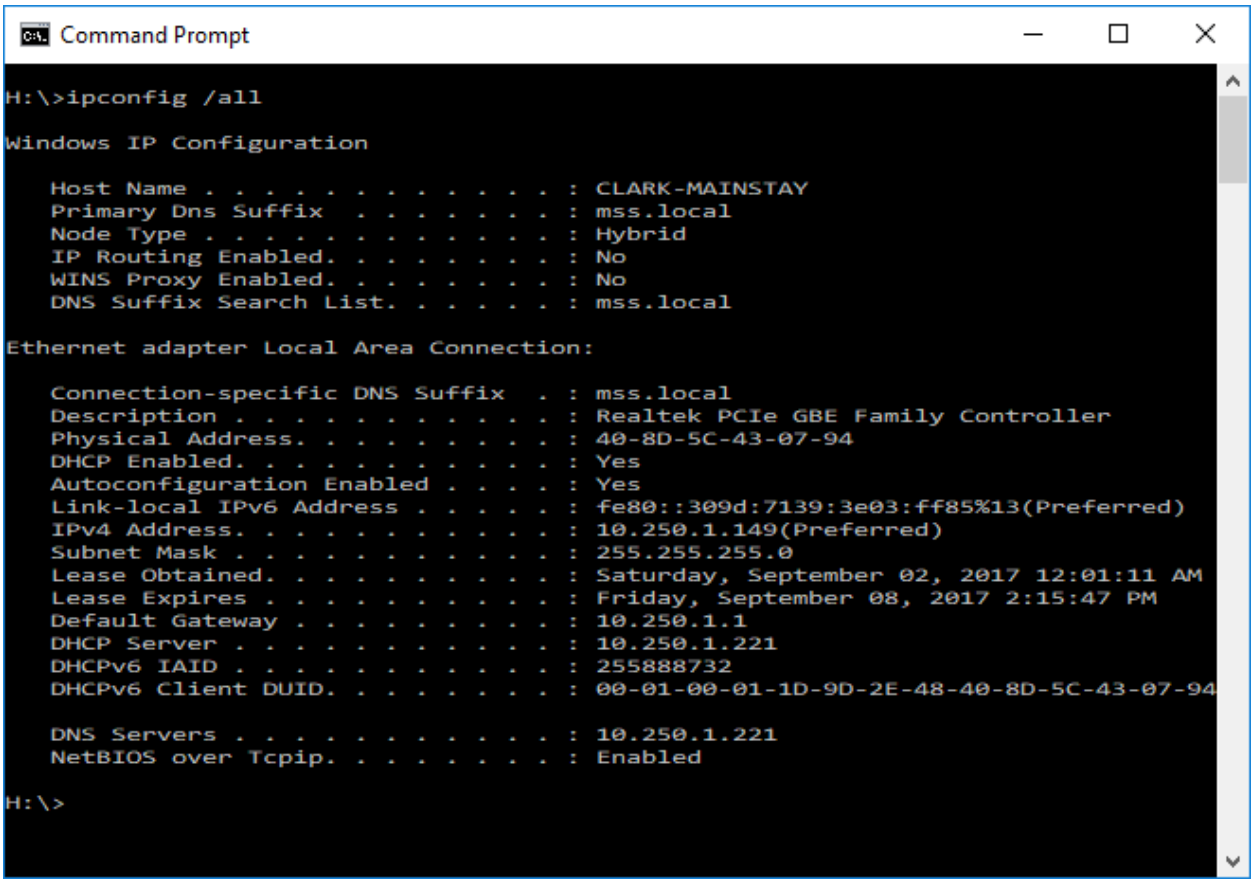
There are many uses for the ipconfig commands. They can be used for changing IP addresses, releases IP's, among hundreds of other options. The ipconfig is among the most common commands used in a command prompt, and for good reason. The following images depict, in order, what the lab report had us run.

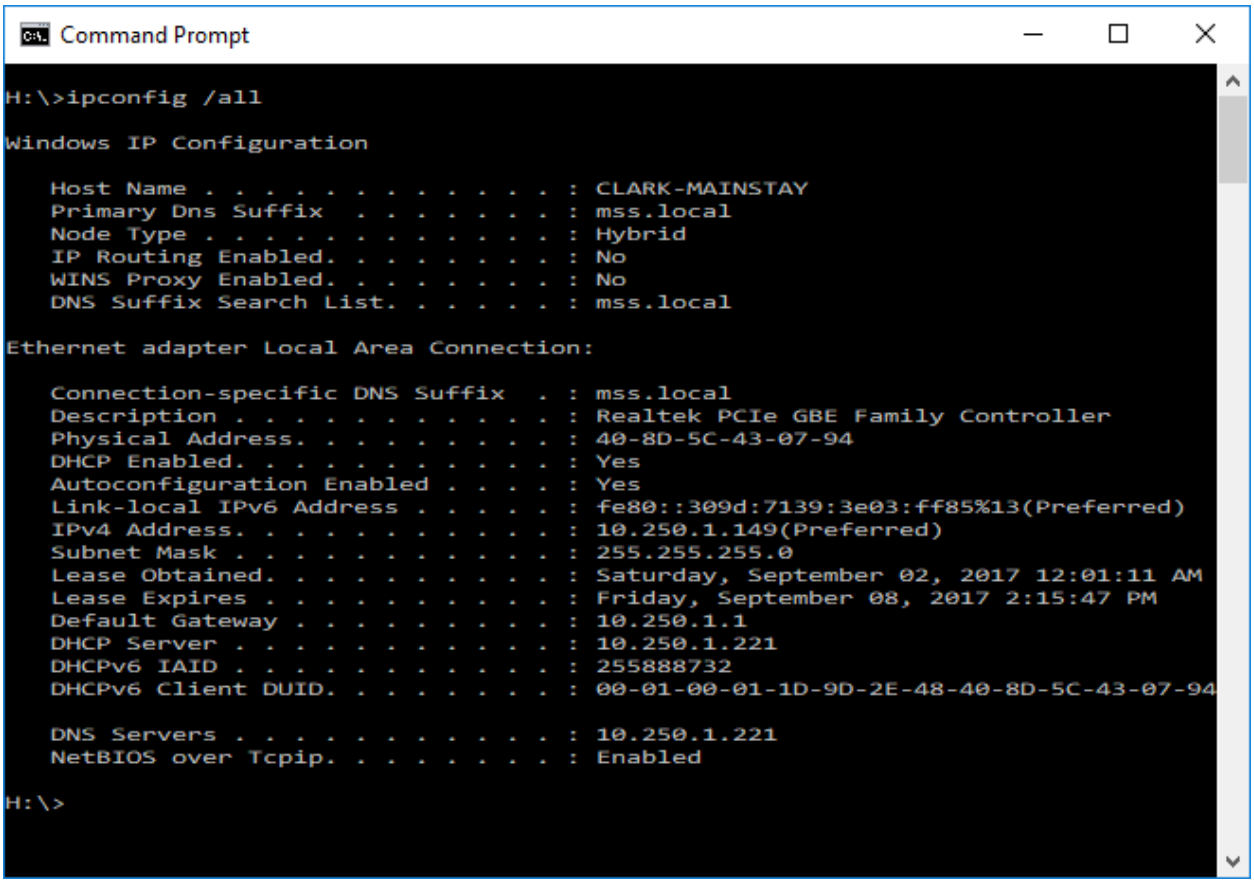
1) ipconfig /all (Displays the full TCP/IP config for all adapters if no adapter/NIC is defined)
2) ipconfig /renew (Renews the IP address forcing the router to assign a new one is new policies require it in the router's settings)
3) ipconfig /release (releases the current IP address to assign a new one if the current one is not statically assigned by MAC address. This can also result in the same IP being assigned even without a static IP depending on how your router is configured)
4) ipconfig /flushdns (Flushes/Wipes the DNS records for that specific address)
5) ipconfig /displaydns (Shows the current DNS on that device)
6) ipconfig /registerdns (Registers a DNS to that device)
7) ipconfig /showclassid (Displays the contents of the DHCP class ID)
8) ipconfig /setclassid (Designates a DHCP class ID)

Furthers Details and References can be found here:

https://technet.microsoft.com/en-us/library/bb490921.aspx

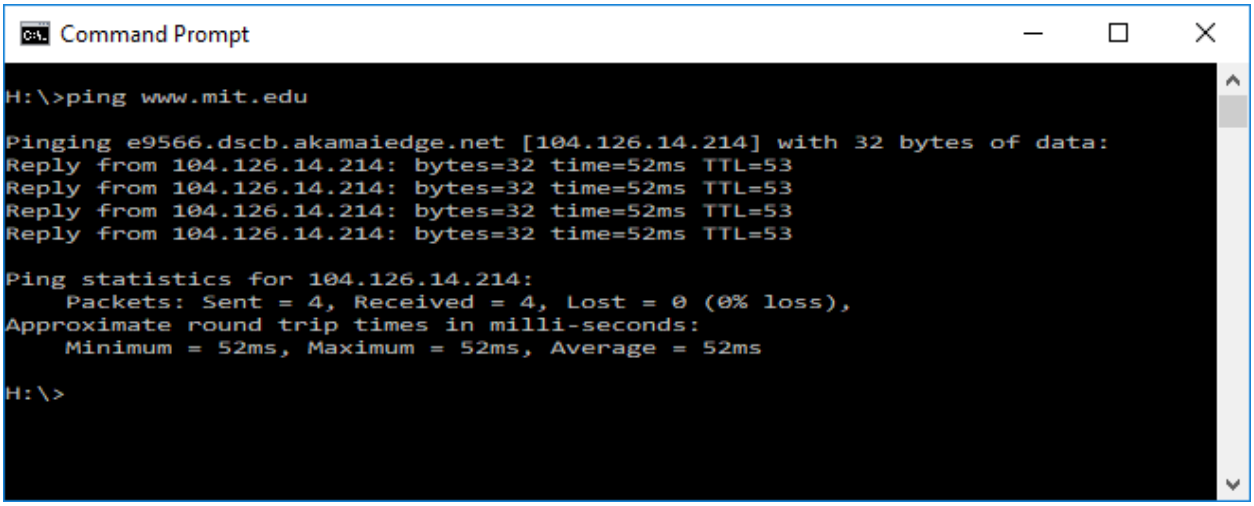

Command Prompt
H:\>ipconfig ?
Error: unrecognized or incomplete command line.
USAGE:
ipconfig [/allcompartments] [/? | /all |
/renew [adapter] | /release [adapter] |
/renew6 [adapter] | /release6 [adapter] |
/flushdns | /displaydns | /registerdns |
/showclassid adapter |
/setclassid adapter [classid] |
/showclassid6 adapter |
/setclassid6 adapter [classid]]
where
adapter Connection name
(wildcard characters * and ? allowed, see examples)
Options:
/? Display this help message
/all Display full configuration information.
/release Release the IPv4 address for the specified adapter.
/release6 Release the IPv6 address for the specified adapter.
/renew Renew the IPv4 address for the specified adapter.
/renew6 Renew the IPv6 address for the specified adapter.
/flushdns Purges the DNS Resolver cache.
/registerdns Refreshes all DHCP leases and re-registers DNS names
/displaydns Display the contents of the DNS Resolver Cache.
/showclassid Displays all the dhcp class IDs allowed for adapter.
/setclassid Modifies the dhcp class id.
/showclassid6 Displays all the IPv6 DHCP class IDs allowed for adapter
.
/setclassid6 Modifies the IPv6 DHCP class id.
The default is to display only the IP address, subnet mask and
default gateway for each adapter bound to TCP/IP.
For Release and Renew, if no adapter name is specified, then the IP address
leases for all adapters bound to TCP/IP will be released or renewed.
For Setclassid and Setclassid6, if no ClassId is specified, then the ClassId is
removed.
Examples:
> ipconfig ... Show information
> ipconfig /all ... Show detailed information
> ipconfig /renew ... renew all adapters
> ipconfig /renew EL* ... renew any connection that has its
name starting with EL
> ipconfig /release *Con* ... release all matching connections,
eg. "Wired Ethernet Connection 1" or
"Wired Ethernet Connection 2"
> ipconfig /allcompartments ... Show information about all
compartments
> ipconfig /allcompartments /all ... Show detailed information about all
compartments
H:\>

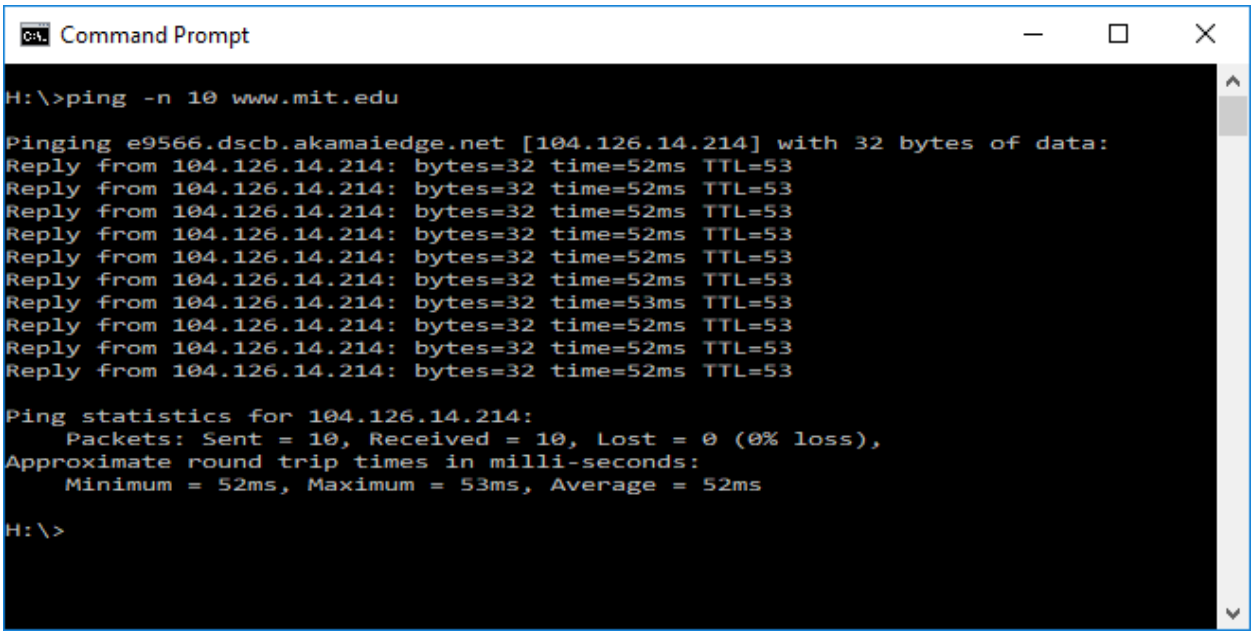

Command Prompt
H:\>ipconfig /all
Windows IP Configuration
Host Name . . . . . : CLARK-MAINSTAY
Primary Dns Suffix . . . . . : mss.local
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No
DNS Suffix Search List. . . . . : mss.local
Ethernet adapter Local Area Connection:
Connection-specific DNS Suffix . : mss.local
Description . . . . . : Realtek PCIe GBE Family Controller
Physical Address. . . . . : 40-8D-5C-43-07-94
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::309d:7139:3e03:ff85%13(Preferred)
IPv4 Address. . . . . : 10.250.1.149(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : Saturday, September 02, 2017 12:01:11 AM
Lease Expires . . . . . : Friday, September 08, 2017 2:15:47 PM
Default Gateway . . . . . : 10.250.1.1
DHCP Server . . . . . : 10.250.1.221
DHCPv6 IAID . . . . . : 255888732
DHCPv6 Client DUID. . . . . : 00-01-00-01-1D-9D-2E-48-40-8D-5C-43-07-94
DNS Servers . . . . . : 10.250.1.221
NetBIOS over Tcpip. . . . . : Enabled
H:\>

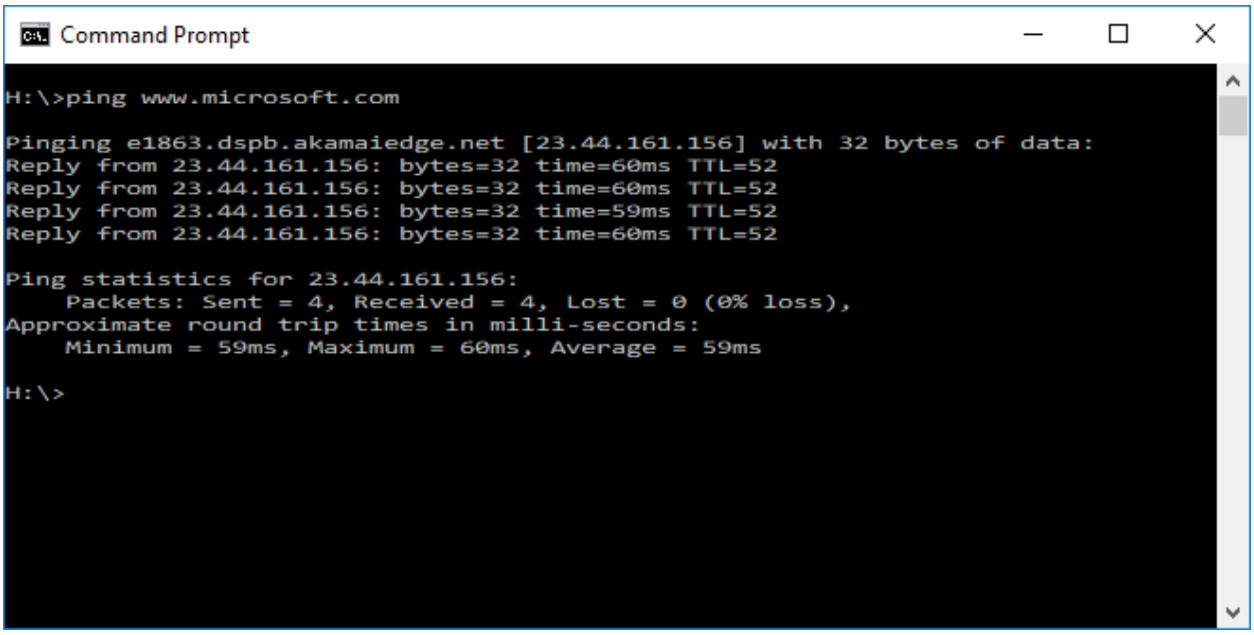


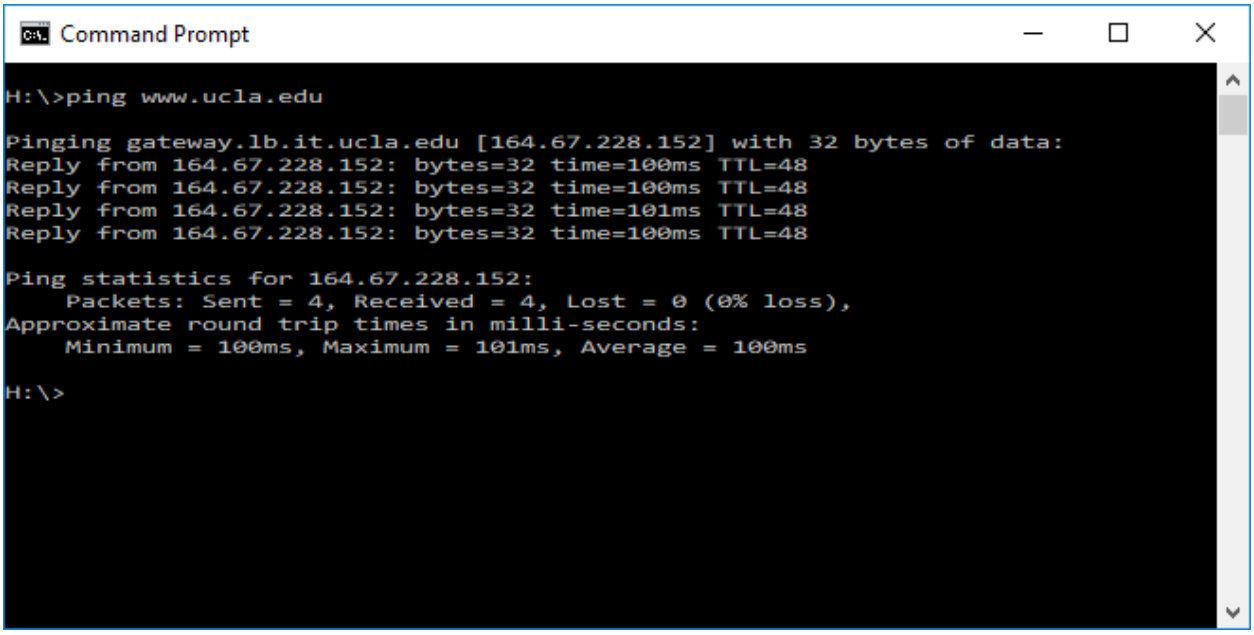
ACTIVITY 2C DATA:

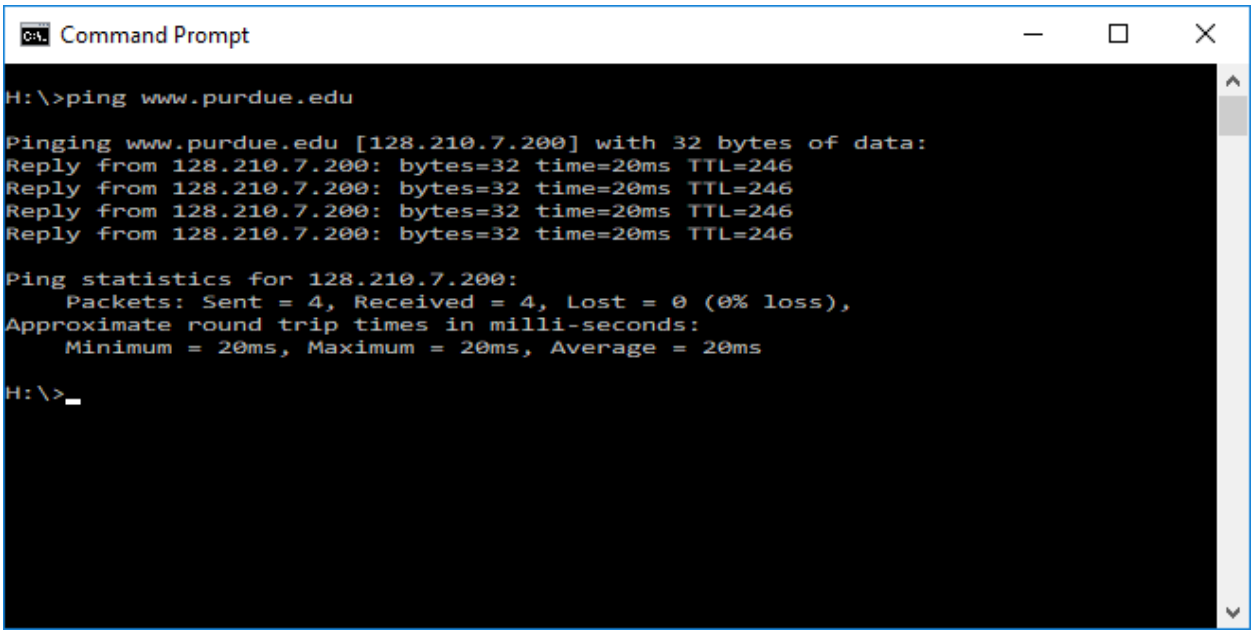
The ping tests to the assorted Domains resulted in similar results. The -n 10 command allows a user to specify how many ping tests are run before stopping. If ping -n is used without a number following it, a continuous ping will be run, this can be useful for testing to see if a connection is not stable, but still online. I did not see any large fluctuations in my tests with ms delays. They were all very consistent and well within a healthy range, which, in my opinion is anything under 50ms. This varies depending on the type of network set up, and whether or not delays are important such as live video feeds, etc. None of these tests involved changing the number of bytes of data sent for the ping tests, I have actually never tried adjusting that and will look into it this weekend to find out more.


Command Prompt
H:\>ping www.mit.edu
Pinging e9566.dscb.akamaiedge.net [104.126.14.214] with 32 bytes of data:
Reply from 104.126.14.214: bytes=32 time=52ms TTL=53
Reply from 104.126.14.214: bytes=32 time=52ms TTL=53
Reply from 104.126.14.214: bytes=32 time=52ms TTL=53
Reply from 104.126.14.214: bytes=32 time=52ms TTL=53
Ping statistics for 104.126.14.214:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 52ms, Maximum = 52ms, Average = 52ms
H:\>


Command Prompt
H:\>ping -n 10 www.mit.edu
Pinging e9566.dscb.akamaiedge.net [104.126.14.214] with 32 bytes of data:
Reply from 104.126.14.214: bytes=32 time=52ms TTL=53
Reply from 104.126.14.214: bytes=32 time=52ms TTL=53
Reply from 104.126.14.214: bytes=32 time=52ms TTL=53
Reply from 104.126.14.214: bytes=32 time=52ms TTL=53
Reply from 104.126.14.214: bytes=32 time=52ms TTL=53
Reply from 104.126.14.214: bytes=32 time=52ms TTL=53
Reply from 104.126.14.214: bytes=32 time=53ms TTL=53
Reply from 104.126.14.214: bytes=32 time=52ms TTL=53
Reply from 104.126.14.214: bytes=32 time=52ms TTL=53
Reply from 104.126.14.214: bytes=32 time=52ms TTL=53
Ping statistics for 104.126.14.214:
Packets: Sent = 10, Received = 10, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 52ms, Maximum = 53ms, Average = 52ms
H:\>

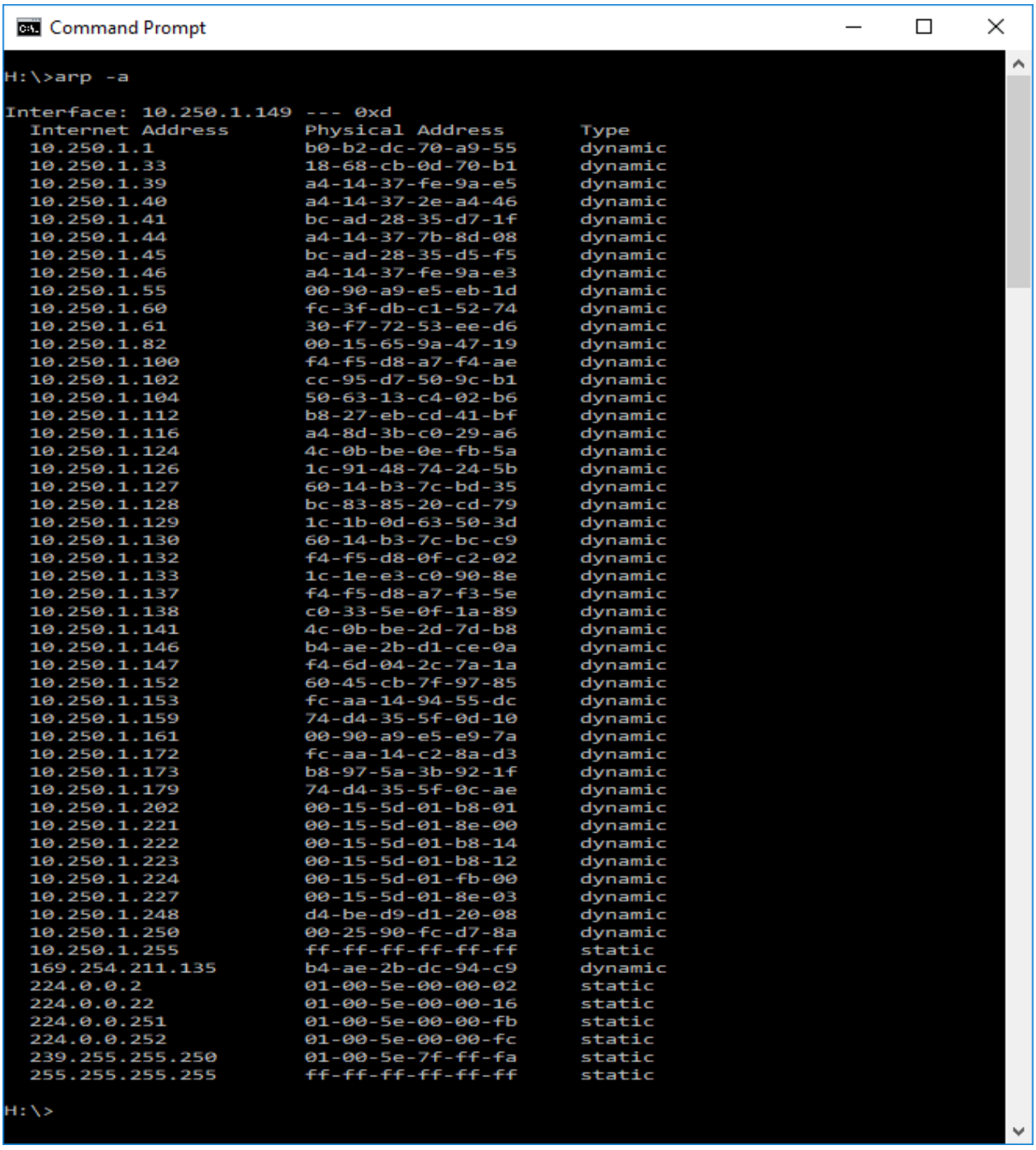

Command Prompt
H:\>ping www.microsoft.com
Pinging e1863.dspb.akamaiedge.net [23.44.161.156] with 32 bytes of data:
Reply from 23.44.161.156: bytes=32 time=60ms TTL=52
Reply from 23.44.161.156: bytes=32 time=60ms TTL=52
Reply from 23.44.161.156: bytes=32 time=59ms TTL=52
Reply from 23.44.161.156: bytes=32 time=60ms TTL=52
Ping statistics for 23.44.161.156:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 59ms, Maximum = 60ms, Average = 59ms
H:\>


Command Prompt
H:\>ping www.ucla.edu
Pinging gateway.lb.it.ucla.edu [164.67.228.152] with 32 bytes of data:
Reply from 164.67.228.152: bytes=32 time=100ms TTL=48
Reply from 164.67.228.152: bytes=32 time=100ms TTL=48
Reply from 164.67.228.152: bytes=32 time=101ms TTL=48
Reply from 164.67.228.152: bytes=32 time=100ms TTL=48
Ping statistics for 164.67.228.152:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 100ms, Maximum = 101ms, Average = 100ms
H:\>


Command Prompt
H:\>ping www.purdue.edu
Pinging www.purdue.edu [128.210.7.200] with 32 bytes of data:
Reply from 128.210.7.200: bytes=32 time=20ms TTL=246
Reply from 128.210.7.200: bytes=32 time=20ms TTL=246
Reply from 128.210.7.200: bytes=32 time=20ms TTL=246
Reply from 128.210.7.200: bytes=32 time=20ms TTL=246
Ping statistics for 128.210.7.200:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 20ms, Maximum = 20ms, Average = 20ms
H:\>

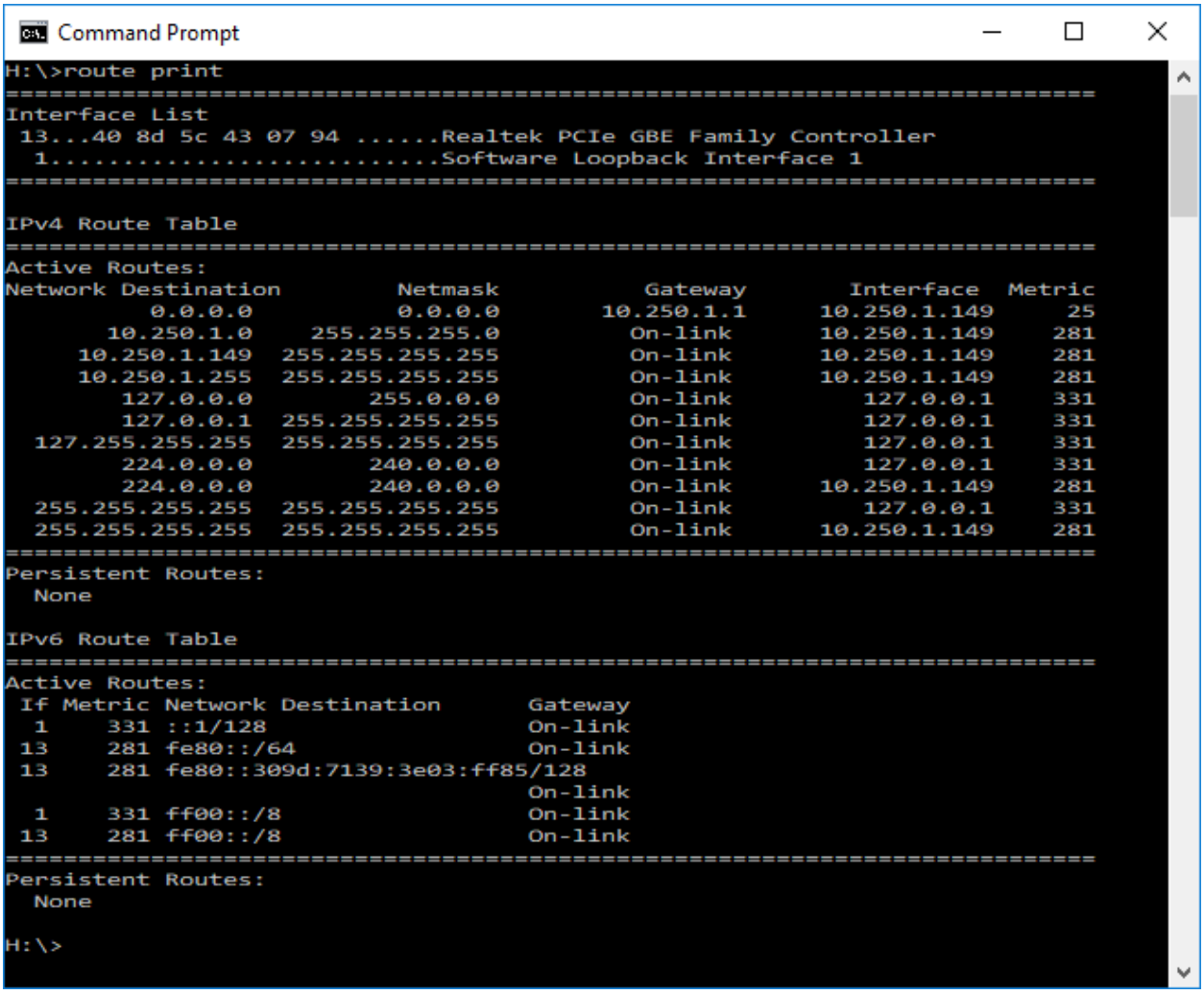
ACTIVITY 2D DATA:

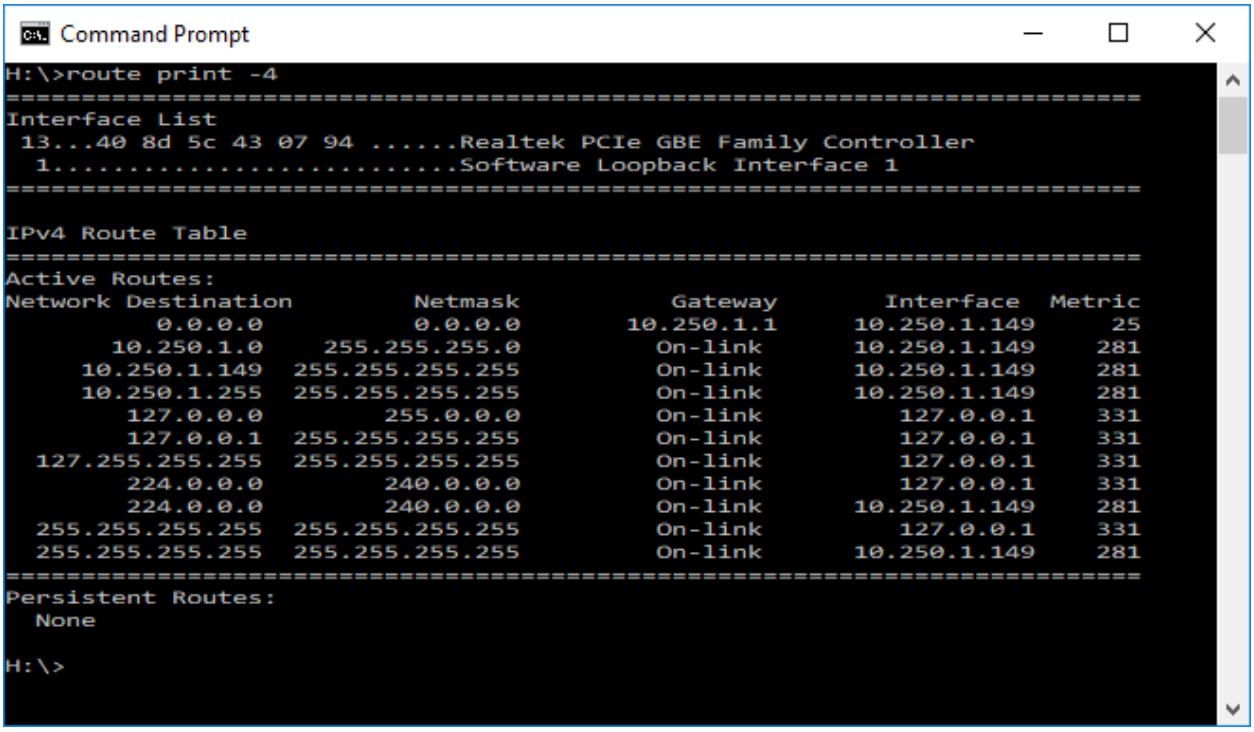
The “arp” command stands for Address Resolution Protocol. This command displays all local physical connection MAC addresses. This also states the types, whether dynamic or static. It is very useful when trying to find specific devices since MAC (physical addresses) are typically static.

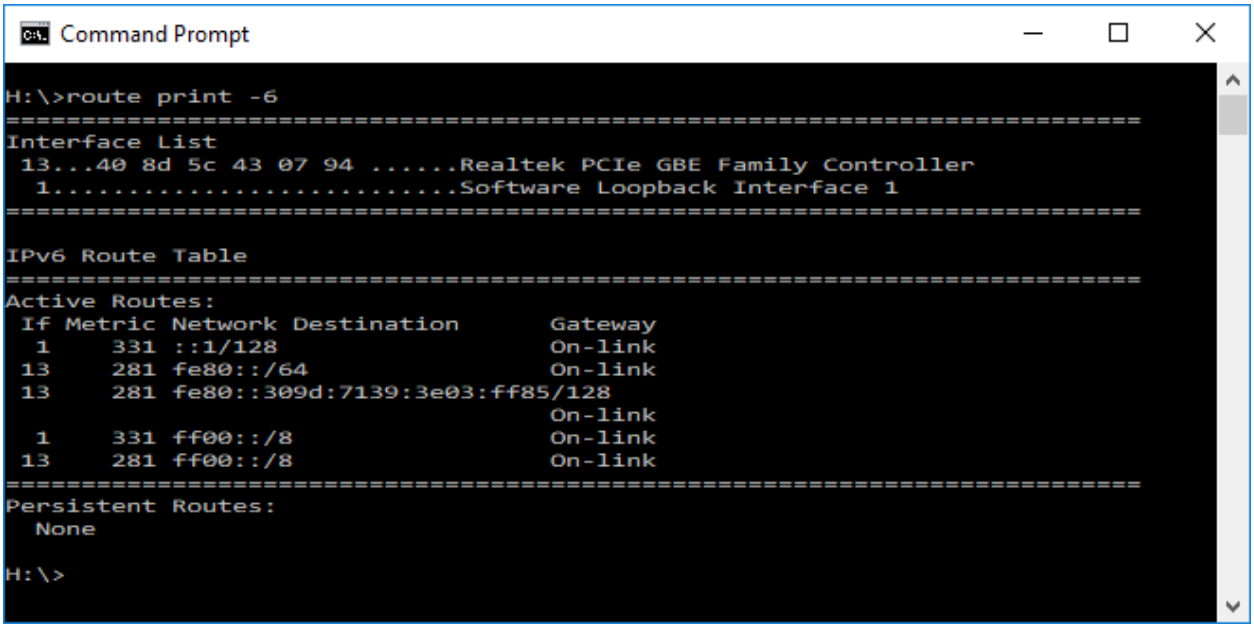


ACTIVITY 2E DATA:

The route commands display both the virtual and physical NIC's on the PC as well as the active routing tables of the machine the command was run on. You can choose whether or not to define IPV6 and IPV4 by using -4 or -6 at the end of the command.

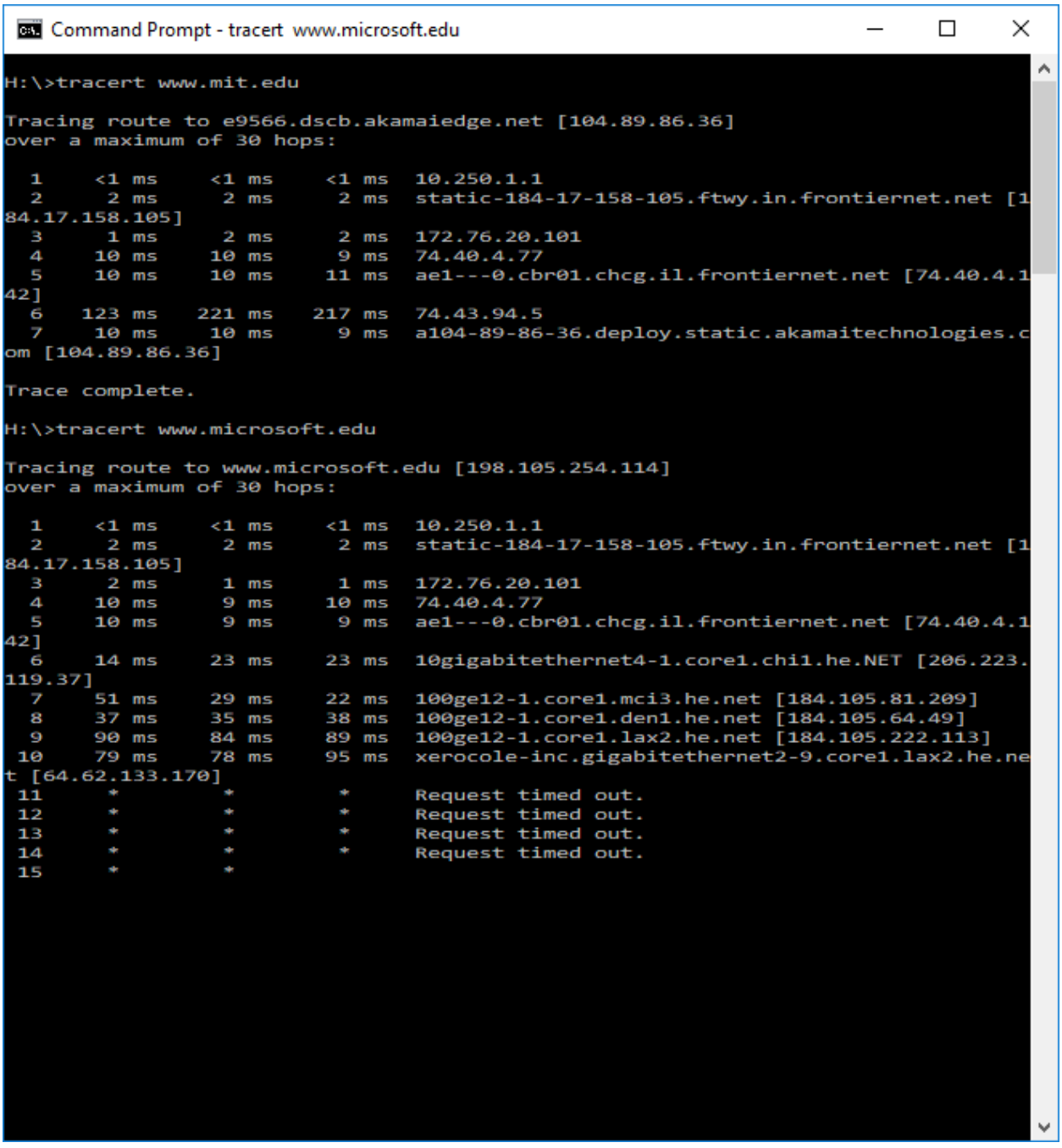

Command Prompt
H:\>route print
Interface List
13...40 8d 5c 43 07 94 ......Realtek PCIe GBE Family Controller
1...........................Software Loopback Interface 1
IPv4 Route Table
Active Routes:
Network Destination Netmask Gateway Interface Metric
0.0.0.0 0.0.0.0 10.250.1.1 10.250.1.149 25
10.250.1.0 255.255.255.0 On-link 10.250.1.149 281
10.250.1.149 255.255.255.255 On-link 10.250.1.149 281
10.250.1.255 255.255.255.255 On-link 10.250.1.149 281
127.0.0.0 255.0.0.0 On-link 127.0.0.1 331
127.0.0.1 255.255.255.255 On-link 127.0.0.1 331
127.255.255.255 255.255.255.255 On-link 127.0.0.1 331
224.0.0.0 240.0.0.0 On-link 127.0.0.1 331
224.0.0.0 240.0.0.0 On-link 10.250.1.149 281
255.255.255.255 255.255.255.255 On-link 127.0.0.1 331
255.255.255.255 255.255.255.255 On-link 10.250.1.149 281
Persistent Routes:
None
IPv6 Route Table
Active Routes:
If Metric Network Destination Gateway
1 331 ::1/128 On-link
13 281 fe80::/64 On-link
13 281 fe80::309d:7139:3e03:ff85/128
On-link
1 331 ff00::/8 On-link
13 281 ff00::/8 On-link
Persistent Routes:
None
H:\>

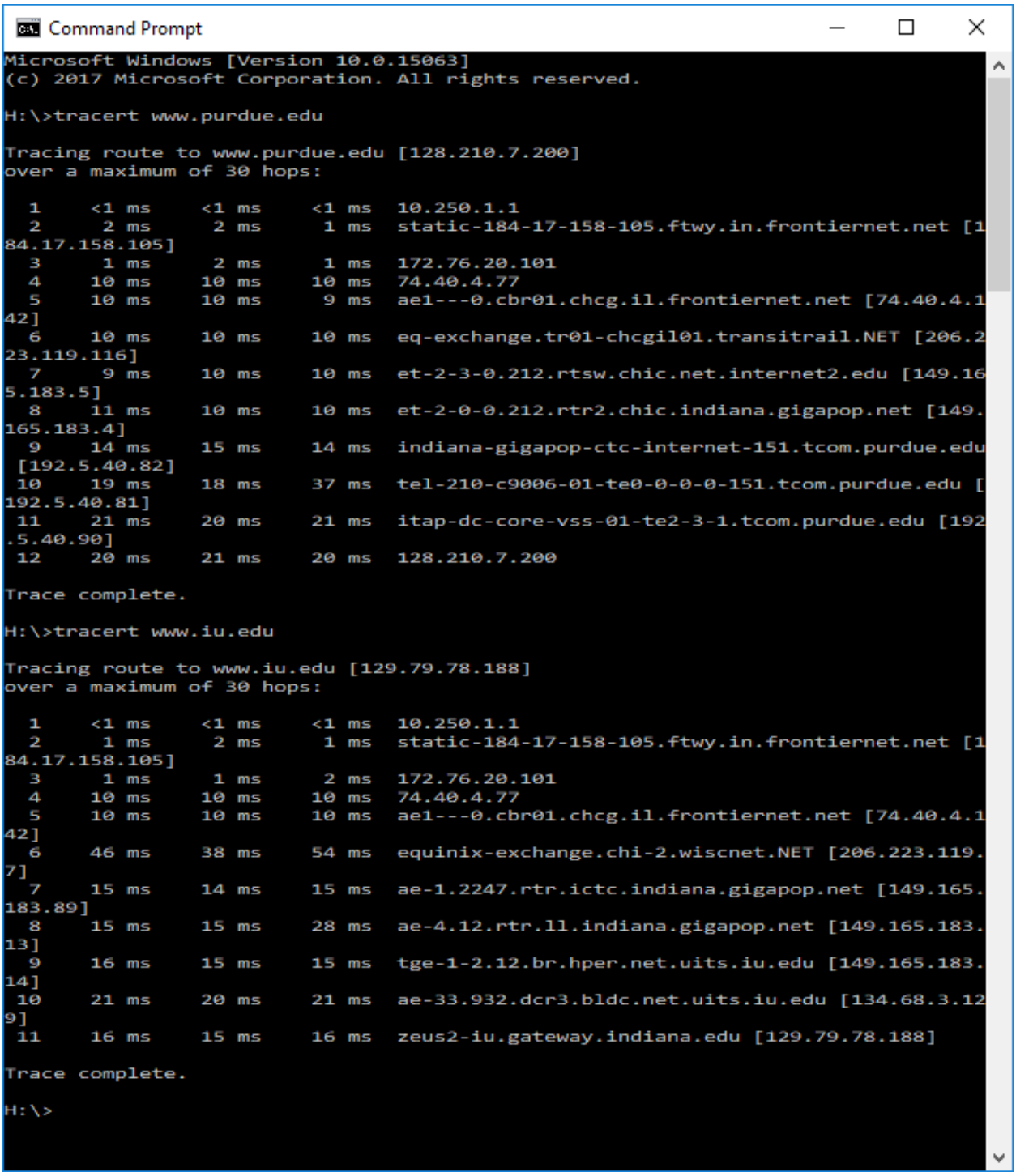

Command Prompt
H:\>route print -4
Interface List
13...40 8d 5c 43 07 94 ......Realtek PCIe GBE Family Controller
1...........................Software Loopback Interface 1
IPv4 Route Table
Active Routes:
Network Destination Netmask Gateway Interface Metric
0.0.0.0 0.0.0.0 10.250.1.1 10.250.1.149 25
10.250.1.0 255.255.255.0 On-link 10.250.1.149 281
10.250.1.149 255.255.255.255 On-link 10.250.1.149 281
10.250.1.255 255.255.255.255 On-link 10.250.1.149 281
127.0.0.0 255.0.0.0 On-link 127.0.0.1 331
127.0.0.1 255.255.255.255 On-link 127.0.0.1 331
127.255.255.255 255.255.255.255 On-link 127.0.0.1 331
224.0.0.0 240.0.0.0 On-link 127.0.0.1 331
224.0.0.0 240.0.0.0 On-link 10.250.1.149 281
255.255.255.255 255.255.255.255 On-link 127.0.0.1 331
255.255.255.255 255.255.255.255 On-link 10.250.1.149 281
Persistent Routes:
None
H:\>


Command Prompt
H:\>route print -6
Interface List
13...40 8d 5c 43 07 94 ......Realtek PCIe GBE Family Controller
1...........................Software Loopback Interface 1
IPv6 Route Table
Active Routes:
If Metric Network Destination Gateway
1 331 ::1/128 On-link
13 281 fe80::/64 On-link
13 281 fe80::309d:7139:3e03:ff85/128
On-link
1 331 ff00::/8 On-link
13 281 ff00::/8 On-link
Persistent Routes:
None
H:\>

ACTIVITY 2F DATA:

The "tracert" command is used to define which route packets use in transit from the local system to the defined remote system. I noticed that the www.Microsoft.edu address time out because it is not an active Domain since they do not (to my knowledge) operate an educational institute. This is typically a command that is run to see if a website domain is working or not. We use it often at the office at work when a client's website goes down.




Command Prompt
Microsoft Windows [Version 10.0.15063]
(c) 2017 Microsoft Corporation. All rights reserved.
H:\>tracert www.purdue.edu
Tracing route to www.purdue.edu [128.210.7.200]
over a maximum of 30 hops:
1 <1 ms <1 ms <1 ms 10.250.1.1
2 2 ms 2 ms 1 ms static-184-17-158-105.ftwy.in.frontiernet.net [184.17.158.105]
3 1 ms 2 ms 1 ms 172.76.20.101
4 10 ms 10 ms 10 ms 74.40.4.77
5 10 ms 10 ms 9 ms ae1---0.cbr01.chcg.il.frontiernet.net [74.40.4.142]
6 10 ms 10 ms 10 ms eq-exchange.tr01-chcgil01.transitrail.NET [206.223.119.116]
7 9 ms 10 ms 10 ms et-2-3-0.212.rtsw.chic.net.internet2.edu [149.165.183.5]
8 11 ms 10 ms 10 ms et-2-0-0.212.rtr2.chic.indiana.gigapop.net [149.165.183.4]
9 14 ms 15 ms 14 ms indiana-gigapop-ctc-internet-151.tcom.purdue.edu [192.5.40.82]
10 19 ms 18 ms 37 ms tel-210-c9006-01-te0-0-0-0-151.tcom.purdue.edu [192.5.40.81]
11 21 ms 20 ms 21 ms itap-dc-core-vss-01-te2-3-1.tcom.purdue.edu [192.5.40.90]
12 20 ms 21 ms 20 ms 128.210.7.200
Trace complete.
H:\>tracert www.iu.edu
Tracing route to www.iu.edu [129.79.78.188]
over a maximum of 30 hops:
1 <1 ms <1 ms <1 ms 10.250.1.1
2 1 ms 2 ms 1 ms static-184-17-158-105.ftwy.in.frontiernet.net [184.17.158.105]
3 1 ms 1 ms 2 ms 172.76.20.101
4 10 ms 10 ms 10 ms 74.40.4.77
5 10 ms 10 ms 10 ms ae1---0.cbr01.chcg.il.frontiernet.net [74.40.4.142]
6 46 ms 38 ms 54 ms equinix-exchange.chi-2.wiscnet.NET [206.223.119.7]
7 15 ms 14 ms 15 ms ae-1.2247.rtr.ictc.indiana.gigapop.net [149.165.183.89]
8 15 ms 15 ms 28 ms ae-4.12.rtr.ll.indiana.gigapop.net [149.165.183.13]
9 16 ms 15 ms 15 ms tge-1-2.12.br.hper.net.uits.iu.edu [149.165.183.14]
10 21 ms 20 ms 21 ms ae-33.932.dcr3.bldc.net.uits.iu.edu [134.68.3.129]
11 16 ms 15 ms 16 ms zeus2-iu.gateway.indiana.edu [129.79.78.188]
Trace complete.
H:\>

CONCLUSION:

This was a useful lab to introduce people to the basics of the command prompt. It shows people how to get vital information about devices on a network as well as the routing tables and physical addresses currently in use. Some of these commands I use on a weekly basis when clients are having trouble connecting or loading webpages as well for issues with connectivity to servers or ipsec tunnels.

To recap on what was covered, the "netstat" command allows for viewing of networking information and monitor TCP/IP network activity. The "ipconfig" command allows for a great number of useful operations involving setting, releasing, renew, and assessing the IP addresses of devices on the network. The "ping" command allows one to assess delay times, and connectivity to remote addresses and domains. The "route" command displays routing tables and is useful when troubleshooting and ensuring efficiency on the network. The "tracert" commands tells you which route specific packets are taking from a host to a destination.

QUESTIONS/COMMENTS:

I intend to delve a little deeper into the command prompt this weekend to get a further grasp of all that it can do. I had not run the netstat commands in quite some time.

GRADE A+