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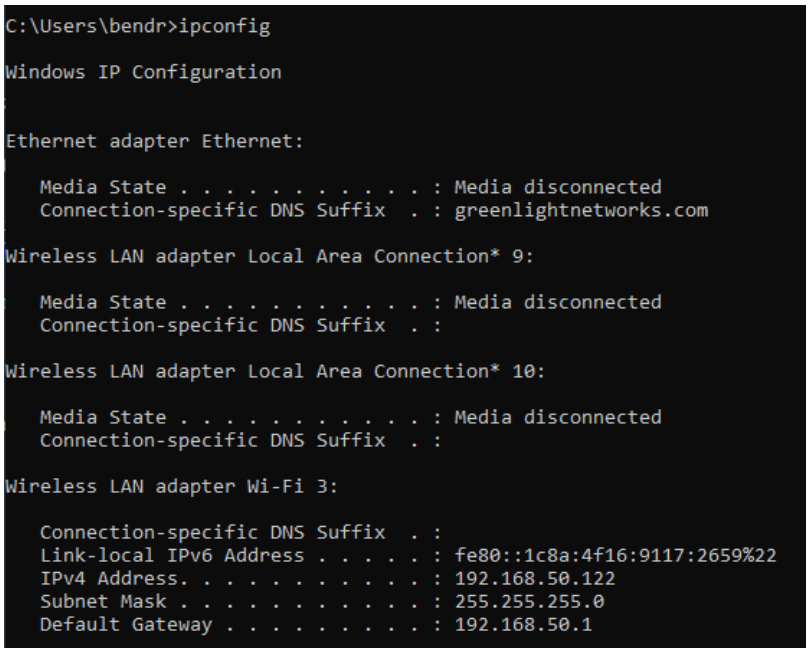
SWEN-341
Network Utilities Assignment

Ipconfig:

Ipconfig is a windows based command line utility. It has a direct counterpart in linux, called ifconfig, which does the exact same things, but for this assignment, I'll be covering ipconfig on windows. Ipconfig in its most general sense is a windows command line command that shows your computer's current TCP/IP settings and configuration. That means you can view your IP address, various ports connected to your pc, and also edit and change them in some cases. For example, running ipconfig on my pc shows the following:



The above image shows the ethernet, 2 unused LAN connections, and then the used wifi adapter that my computer connects to the internet with. It shows the IPv4 address, which is the IP address of my PC, and the mask and gateway which are both addresses used to connect to the outside internet.

Using ip config isnt just useful for viewing information about your internet connection, you can also use it to clear local caches, in the off chance that your computer is unable to recognize a new device/domain. Using ipconfig /flushdns, you can clear your local dns cache and refresh it which will allow previously unknown/hidden devices to be seen. Here is an example of me running ipconfig /flushdns.

```
C:\Users\bendr>ipconfig /flushdns

Windows IP Configuration

Successfully flushed the DNS Resolver Cache.
```

The command doesn't do much display wise, but behind the scenes it deletes the current cache, and creates a brand new cache based on the current connections to the computer.

Overall this is a pretty useful command, and in my experience i've mainly used it to check IP addresses and to reset specific caches and ip addresses.

NSLookup:

NSLookup is a windows based command prompt tool for troubleshooting and fixing DNS issues. It has two different mods, one is a non-interactive mode that is used to retrieve small amounts of information and view it, and the second interactive mode is used to view large amounts of information. The most basic version of the command just shows the main “server” of whatever machine you're running nslookup on. For my PC, the following output looks like this:

```
C:\Users\bendr>nslookup
Default Server:  RT-AX58U-C650
Address:  192.168.50.1
```

The “Server” is the name of my motherboard, and the address is my computer’s ip gateway. You can see this number is the same as the number in the ipconfig output. By putting in an IP address after the nslookup command, you can retrieve information about the ip address specified. You can also provide a website, so for example nslookup google.come would result in this:

```
C:\WINDOWS\system32>nslookup google.com
Server:  RT-AX58U-C650
Address:  192.168.50.1

Non-authoritative answer:
Name:    google.com
Addresses:  2607:f8b0:4006:81e::200e
          142.251.35.174
```

This gives information on google.com, and shows its address. You can pass in multiple addresses/ip addresses and nslookup will show information on your current server, and all the servers that exist in the parameters you send it.

This command is very useful to look up information about not just the machine you're on right now, but any other machine that your current computer has access to on the network. This is

useful for finding devices on a local network, or ensuring you have connection to devices/domains on the internet. It can be used in a similar manner of ping, however it doesnt send packets back and forth, it simply grabs the address and name if the destination answers the nslookup command request.