# Module 9 - Networking

(23 points)

## Your laptop IP Information

### Locating your IP information

For this part, we will find the current IP configuration of your computer.

MacOS
Under the Apple icon menu in the upper left corner of screen, select System Settings which will open a window. In that Window, click on the Network icon. On the right hand side of the window, select Wi-Fi and then the Details button.

You should be presented with an IPv4 Address and your IPv6 address if present. Click on the Details button and then the Hardware tab to view your MAC Address.

Record your IPv4 Address (Number) and if you have a IPv6 Address, record that as well. Also record your MAC Address.

- IPv4 Address: 10.0.0.175
- IPv6 Address: [redacted]
- MAC address: [redacted]

### Question 1: Is your IP # of your laptop private or public?

## What IP# does the world see?

- My IPv4/IPv6 address is private and used so my router can locate where to send the packets of data.
- The world sees 68.[redacted]

### Question 2: Is the resulting IP number IPv4 or IPv6? Does it match the IP information your laptop reported? If not, why?

- My IPv4 and IPv6 on whatismyip.com are different from what my laptop reported. This is because they are my public IPs. My laptop reports private IPs.

# Using DNS

For this part, login to your silo account. Use the host command on silo to find the IP Addresses of the following hostnames and record them for submission:

www.indiana.edu

```
    indiana.edu has address [redacted]
indiana.edu has address [redacted]
indiana.edu has IPv6 address [redacted]
indiana.edu has IPv6 address [redacted]
```

silo.luddy.indiana.edu

```
     silo.luddy.indiana.edu has address [redacted]
```

nmap.org

```
    nmap.org has address 45.33.49.119
     nmap.org has IPv6 address 2600:3c01:e000:3e6::6d4e:7061
```

Question 3: How many IP addresses did you find for www.indiana.edu? Why do you think there are so many IP addresses associated with this hostname?

- I found 4 total IP addresses with www.indiana.edu
- There are multiple IPs with this hostname so they can balance loads if traffic is increased, increasing availability. It also improves user experience.

# Using nmap to port scan

For this part you will download and install the nmap utility and its associated GUI tool, Zenmap.
The download page is https://nmap.org/download.html but the specific links for macOS and
Windows are below:

macOS: https://nmap.org/dist/nmap-7.94.dmg
Windows: https://nmap.org/dist/nmap-7.94-setup.exe

This should have installed the Zenmap GUI tool for nmap. Zenmap provides easy

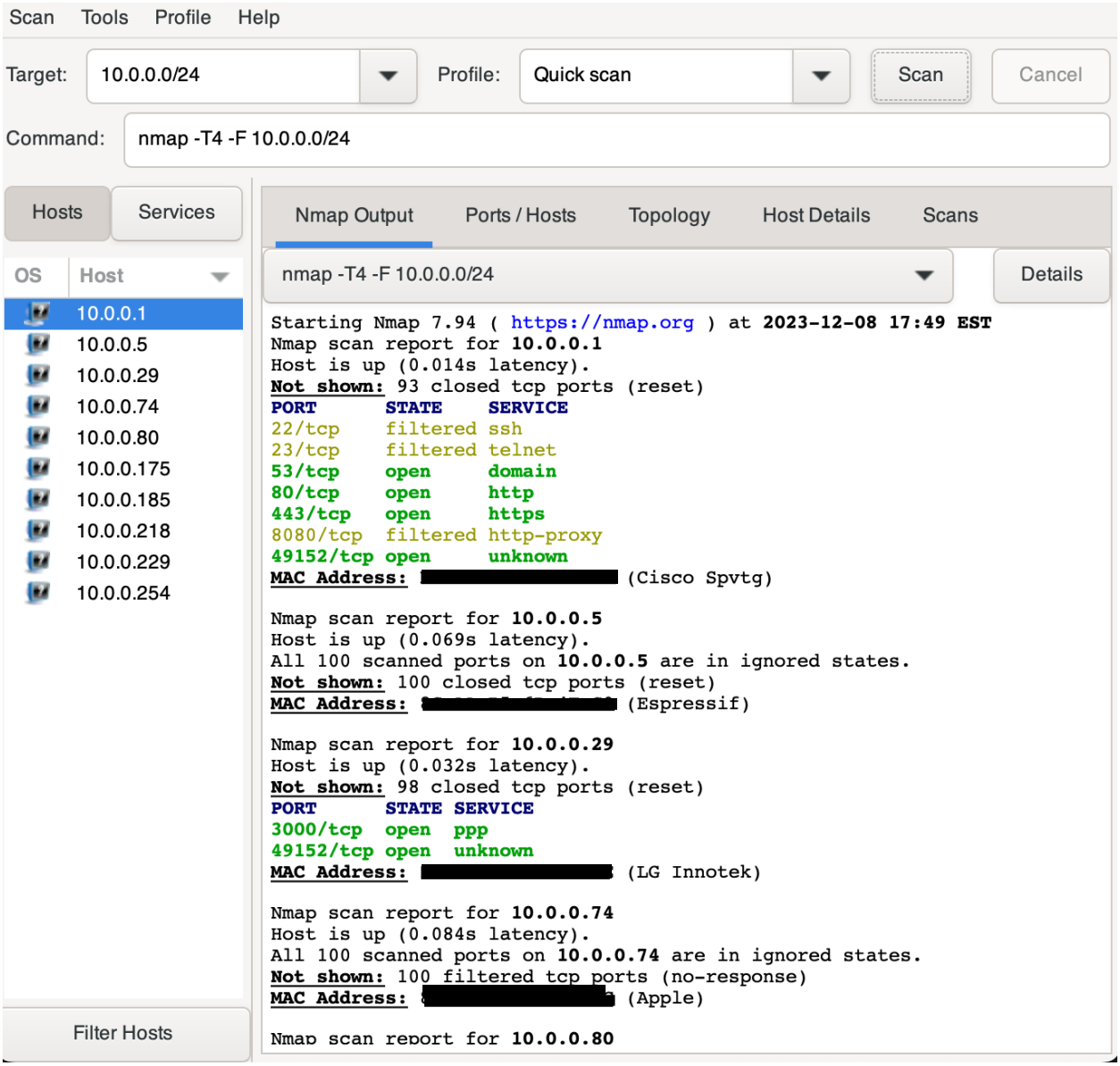
access to the different scans nmap can perform as well as nicely organizing and visualizing the results of the scans. In addition, it can store the results of previous scans so you can see what has changed in your networks.

Open Zenmap. In the Target text box enter your laptops IPv4 address but replacing the last part of the IP # with 0/24. So if your IP # is [redacted] like mine, you would enter [redacted].0/24 This will restrict the scan to just 254 IP addresses in you LAN.

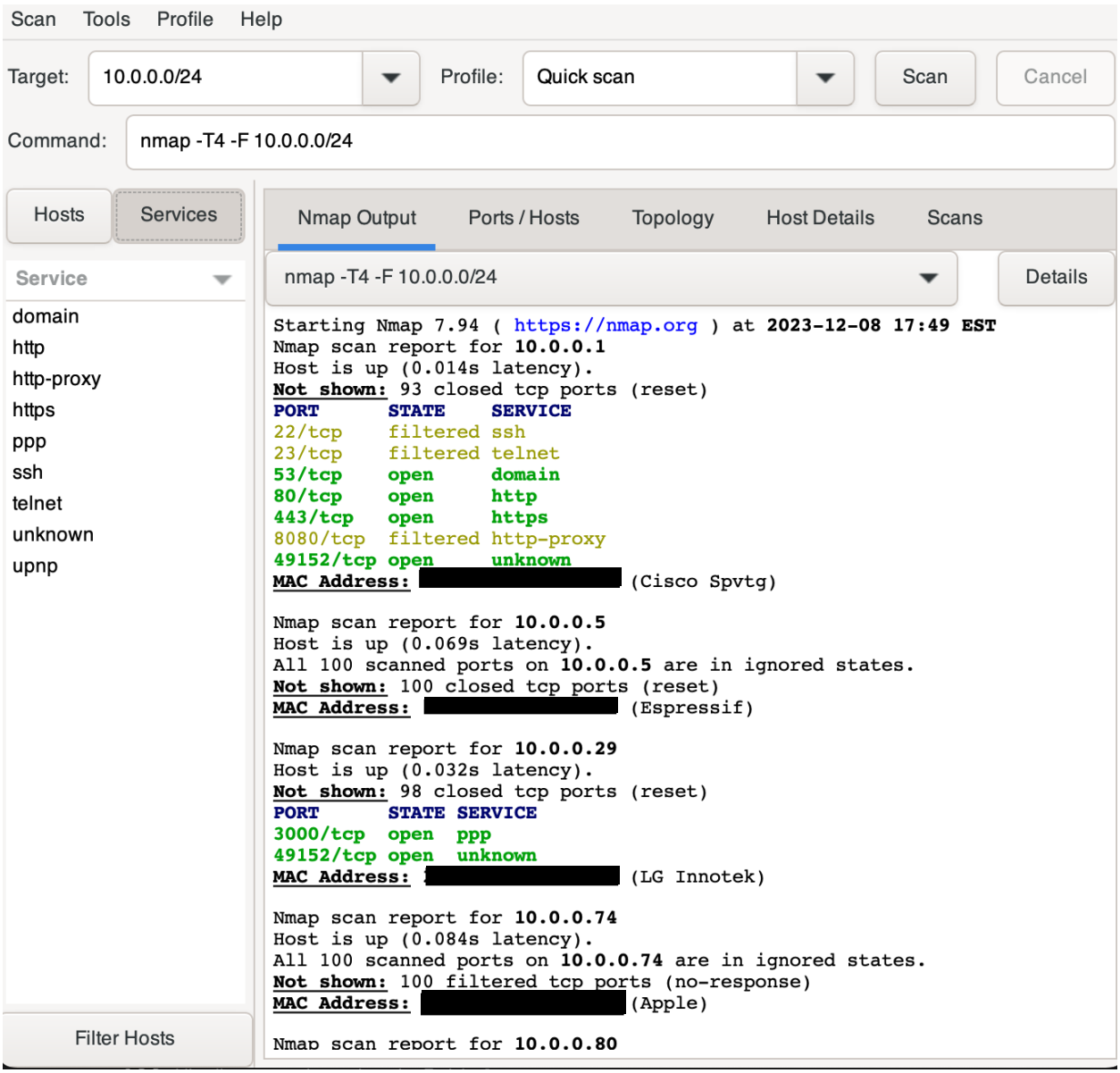
Next select from the drop down list Profile the option for a Quick Scan. Finally click the Scan button to start the scan. It may take as much as a couple minutes for the scan to complete so be patient.

Take a screen shot of the results showing all the hosts discovered. Click on the Services button to display the list of services discovered and take a screenshot of that as well.

- Hosts:




- Services:




## Question 4: How many hosts did your scan discover? Were there any surprises?

- My scan discovered 10 hosts. I didn't expect to have 10 hosts which means I have more connected to my LAN than I thought.

Question 5: How many services did your scan discover? Did you recognize any of the services?

- My scan discovered 9 services. I recognized 5 of the 9 which are more common protocols for secure communication.