

# 20CYS114 - Cyber Security Essentials Labs

## Lab 1 - Computer Network Fundamentals

*For each of the following steps describe your results, give the syntax of the command you used, and, the output produced. Include screen captures as needed in your output. Be sure to label your results carefully and organize your results in the order of steps as given here and to answer each question in your report.*

### Lab Environment:

This lab Demonstrate the usage of Windows Command line utilities to troubleshoot the basic network errors and for network analysis.

### Task 1: Find the status of your Active network.

Open you windows 10 Machine -> Go to Control Panel-> Network and Internet Settings -> View Network Status and Tasks -> Change Adapter Settings -> Right Click on your adapter (Either ethernet or Wi-Fi) -> Click status -> Click Details. Document the Details you have noticed.

### Task 2: Identifying current TCP/IP network configuration values using IPCONFIG

Type Command Prompt in search -> Right click and open as administrator -> Type Ipconfig and press enter -> Document the details you have noticed and follow the same for the following commands.

- a. Ipconfig/all
- b. Ipconfig/flushdns
- c. Ipconfig/?
- d. Ipconfig/showclassid adapter

### Task 3: Test the reachability of a host on an Internet using PING

Type Command Prompt in search -> Right click and open as administrator -> Type the given commands and press enter -> Document the details you have noticed and follow the same for the following commands.

- a. Ping www.google.com
- b. Ping 127.0.0.1
- c. Ping [www.google.com](http://www.google.com) -n 8

### Task 4: Diagnostic analysis of network using TRACERT

Type Command Prompt in search -> Right click and open as administrator -> Type the given commands and press enter -> Document the details you have noticed and follow the same for the following commands.

- a. Tracert [www.google.com](http://www.google.com)
- b. tracert -4 [www.google.com](http://www.google.com)

### **Task 5: Diagnostic analysis of Domain Name service using NSLOOKUP**

Type Command Prompt in search -> Right click and open as administrator -> Type the given commands and press enter -> Document the details you have noticed and follow the same for the following commands.

- a. nslookup google.com
- b. nslookup -type=soa google.com

### **Task 6: Analyzing Network Statistics using NETSTAT, ARP**

Type Command Prompt in search -> Right click and open as administrator -> Type the given commands and press enter -> Document the details you have noticed and follow the same for the following commands.

- a. Netstat
- b. NETSTAT -o
- c. Arp -a
- d. IP Address arp -a