**NATIONAL UNIVERSITY OF COMPUTER & EMERGING SCIENCE Computer Networks Lab (CL3001)**

**Lab Session 01**

**TASKS**

**All the task were done in ubuntu software**

**1. Find the IP address of the computer you are currently using.**

**Command: ifconfig**

**IP address: inet 192.168.18.179**

**2. Find the IP address of the computer you are currently using, plus MAC address, plus whether DHCP is turned on.**

**Command: ifconfig -a**

**Answer: ether c8:5b:76:a0:b1:99**

**Yes dhcp is turned on because it is necessary to find ip addresses**

**3. Display the host name of the computer.**

**Command: hostname**

**Hostname: amin-ThinkPad-X260**

**4. Check for basic IP connectivity between two computers by name and IP address. How can basic IP connectivity be checked? What are the reasons why there is no connectivity?**

**Command: ping google.com or ping 8.8.8.8**

**Reason: if the computer is not connected to internet or hostname entered is wrong**

**5. Show the MAC address of the host.**

**Command: ifconfig -a**

**MAC address: ether f0:d5:bf:72:4d:40**

**6. Show what shared resources are available on the host.**

**Command:**

**Answer:**

**7. Find out which ports on your host are connected to applications. Connect the browser to some external web page before running the appropriate command.**

**Command: netstat -ntulp**

**Answer: udp6 0 0 :::47208 :::\* 35088/firefox**

**8. Find all other hosts available on the network.**

**Command: nmap -sn 192.168.1.0/24**

**Answer:**

**Nmap scan report for 192.168.1.1**

**Host is up (0.027s latency).**

**Nmap scan report for 192.168.1.85**

**Host is up (0.016s latency).**

**Nmap scan report for 192.168.1.97**

**Host is up (0.0084s latency).**

**Nmap done: 256 IP addresses (3 hosts up) scanned in 3.16 seconds**

**9. Show the address of the gateway.**

**Command: ip route**

**Answer: default via 192.168.18.1 dev wlp4s0 proto dhcp metric 600**

**10. Find the path of routers to www.google.com.What is its IP address? How many hops involved in the path?**

**Command: traceroute 8.8.8.8**

**Answer:**

**traceroute to 8.8.8.8 (8.8.8.8), 64 hops max**

**1 192.168.18.1 3.539ms 0.969ms 0.866ms**

**2 202.163.100.236 3.182ms 3.640ms 7.183ms**

**3 192.168.200.185 3.272ms 3.094ms 2.881ms**

**4 192.168.200.2 3.750ms 3.339ms 3.182ms**

**5 192.168.100.21 4.066ms 3.911ms 4.602ms**

**6 \* 10.253.4.50 6.306ms 4.096ms**

**7 10.253.4.26 5.338ms 4.385ms 5.514ms**

**8 74.125.146.188 24.038ms 23.448ms 23.818ms**

**9 \* \* \***

**10 8.8.8.8 24.735ms 22.137ms 22.195ms**

**11. A ping to 192.168.0.2 works but a ping to the machine’s name “blue machine” fails. What could be wrong?**

**Reason :Because blue machine isn’t registered with dns server so dns server isn’t able to convert blu machine to its logical ip address**

**12. Which type of cable will you use to connect in a normal home installation? Give reasons.**

**Answer:**

**In a typical home installation, an Ethernet cable is used to connect devices to a router or a network switch. This type of cable uses RJ45 connectors and is designed to transmit data at high speeds over short distances**

**13. Can you connect a Switch to another Switch or a router to a PC using a straight through cable? Explain your answer.**

**Answer:**

**No. A straight through cable is used to connect devices with different types of interfaces, such as a computer to a switch or a router. The wiring on one end of the cable is different from the wiring on the other end.**

**14. Write a brief report on your home network or any organizational network including topology, 1 page max).**

**Answer:**

**The most common type of home network is a wireless network, which uses Wi-Fi technology to connect devices such as computers, smartphones, and tablets to the internet and to each other.**

**The topology of a network refers to the physical layout of the devices and the connections between them. The most common topology for a home network is a star topology, in which all devices connect to a central device, such as a router or a switch. This central device controls the flow of data between the devices and also connects the network to the internet.**

**In a home network, devices such as computers, laptops, smartphones, and tablets can connect to the internet through a wired or wireless connection. A wired connection uses an Ethernet cable to connect the device to the router, while a wireless connection uses Wi-Fi to connect to the router's wireless network**

**15. Find the path of routers to www.yahoo.com.my. What is its IP address? How many hops involved in the path?**

**Answer:**

**traceroute** [**www.yahoo.com.my**](http://www.yahoo.com.my)

**1 192.168.18.1 1.012ms 7.891ms 0.823ms**

**2 202.163.100.236 3.052ms 2.690ms 6.223ms**

**3 192.168.200.185 3.328ms 2.957ms 2.987ms**

**4 192.168.200.2 4.272ms 3.444ms 3.268ms**

**5 192.168.100.21 6.110ms 3.915ms 3.736ms**

**6 10.253.4.70 4.331ms 7.342ms 5.203ms**

**7 \* \* 10.253.4.4 5.602ms**

**8 80.81.192.115 255.831ms 204.605ms 204.238ms**

**9 209.191.112.17 205.115ms 204.689ms 204.886ms**

**10 209.191.112.54 204.523ms 204.022ms 205.071ms**

**11 209.191.112.135 204.270ms 204.830ms 204.745ms**

**12 77.238.190.3 204.845ms 204.489ms 204.348ms**

**13 77.238.190.103 148.636ms 158.617ms 147.896ms**

**14 212.82.100.150 159.190ms 147.309ms 261.588ms**