Lab 1: Week-1: Networking Tools

• Coverage

1. Discuss what is networking and its significance in computer network. Discuss

the components (i.e., h/w and s/w) required for data communication in a

Computer Network. (Show the h/w components like Network Interface Card

(NIC), Network Cable, RG-45 Connector, Hub, Switch, Router etc.)

2. Discuss different network diagnostic tools

a) Ping

b) Traceroute/Tracert

c) Netstat

d) Nslookup

e) Ipconfig/ifconfig

f) Iptables

• Assignments

1. Find the IP address of your computer. Try connecting to different service providers and notice the changes, if any, in the IP address of your machine.

2. How to send exactly 4 packets of size 100 bytes to www.github.com?

3. Run *traceroute* via two or more service providers for www.kiit.ac.in and report your observations, like if some paths default to IPv6 then how can you force traceroute to use IPv4, any private IP addresses routers that do not reply to requests, etc.

4. How can you limit the number of hops to 10 in a traceroute command?

5. How can you display statistics for all protocols using the netstat command?

6. Use nslookup to find the IP Address of www.kiit.ac.in and www.facebook.com

7. How can you perform a reverse DNS lookup to find the domain name associated with the IP address 8.8.8.8?

8. How can you use nslookup to query www.example.com using the DNS server at 8.8.8.8?

9. How do you use the ipconfig command to display all current TCP/IP network configurations?

10. What are the ipconfig commands to release and renew an IP address on a Windows machine?

11. How do you use iptables to add a rule that allows all incoming HTTP traffic (port 80)?

12. How do you use iptables to block all incoming traffic from the IP address 192.168.1.100?