B.Tech 3rd Year 2nd Sem CSE

Sub: Computer Network Lab (CS-692)
Session-2018

Detailed assignment of Lab-III.

This lab will introduce you to important software tools for managing computer networks.

When configuring and managing a computer network, or diagnosing problems in a network, you need to use the correct tools for the task. Most often these tools are software applications. There are various tools available on most computers that can be used to support common networking tasks including:
- Viewing and changing the configuration of your computer's network interface, such as addresses and other protocol parameters.
- Testing your computer's network connectivity, such as ability to communicate with other computers and statistics of the communication.
- View and analyse the trace sent/received by your computer, as well as other computers on a network.

The tools that can be used to manage the network vary on different operating systems.
For our lab classes, we will use Ubuntu Linux.

1. Viewing Network Interface Information—

   $ ifconfig

2. Testing Network Connectivity ---
   $ ping DESTINATION

3. Testing a Route ---
   $ tracepath DESTINATION

4. Converting Between Domain Names and IP Addresses ----
   $ nslookup DOMAIN # returns IP address
   $ nslookup IPADDRESS # returns domain name

5. Viewing the Routing Table ---
   $ route

6. Converting IP Addresses to Hardware Addresses ---
   $ arp

7. Network Statistics
   $ netstat

8. Setting a Static IP Address

Deliverables—

- View the configuration details, including addresses, of your computers network interfaces.
- Test the network connectivity and network statistics between your computer and several other computers: another PC in the lab; the KGEC webserver; external web servers.
- Trace the path between several pairs of source/destination nodes.
- Use nslookup to google.com. Which is the IP address of the Google site (www.google.com)? In your opinion, what is the reason of having several IP addresses as an output?
- Find the IP addresses of several web servers (domains), using several different DNS servers.
- Try a reverse DNS lookup.
- View your routing table and routing cache.
- View your ARP cache. Find the hardware address of another computer in the lab using ARP.

Describe in brief about each and give snapshots of each of the deliverables.

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LAST DATE OF SUMBMISSION ---- 15th March, 2018