CS 378 Computer Networks

Fall 2014, Lab 05

Working mode

Work individually but collaboration and discussion is ok

Every student should make a (separate) submission

Today’s lab is an “open lab” - no specific tasks to be completed - just “as much as you can do”.

Traceroute etc exploration lab

You've been given the following :

Tracefiles:

lab05trace1

tracerouteToStanford

tracerouteToJapan

tracerouteToGoogle

http://www.cse.iitb.ac.in/~varsha/networks/fall2014/labs/lab05/

Traceroute etc exploration lab

All traces are taken from my laptop connected to my wifi at home.

- Further description of what activities were being done while traces were being taken are here (“Information for lab05 traces”)
- The above document also shows outputs of traceroute commands given from my laptop

Useful utilities/websites

- tracepath (drops packets going outside IITB - not very useful)
- www.traceroute.org (list of websites that will run traceroute for you)
- http://whatismyipaddress.com/ip-hostname
  - reverse IP → hostname lookup (doesn't always work)
- Geographical location of IP addresses
  - http://www.iplocation.net/
  - http://www.infosniper.net/

This is open exploration lab

You ask questions.

Whatever you are curious about (in the context of IP layer)

You try to answer them.

Write answers in lab05.txt

(Many sample questions, next slide, but you can and SHOULD generate more of your own)

Questions

Please also have socrative.com student view open, I may pop some more questions as the lab progresses - Room ID: **dd8f69a7**

1. What is the laptop's wireless interface MAC address ? *Check the document ("Information for lab05….", or tracefiles)*
2. What is its private IP address?
3. How did it get this address? (See sequence of packets in lab05trace1)
    a. Study the first 10-12 packets of lab05trace1 (see info document for background). Describe the 'start up' routine of the laptop.
    b. What is a "gratituous ARP packet"?

...Questions

4. What is the WiFi router's other interface's address?
    a. What other interesting things do you see in its configuration screens?
5. What is the laptop's "public" IP address?
    a. Hint: look at output of traceroute from Stanford to here (html file)
6. Go to http://www.infosniper.net/ - what is your machine's public IP address?

...Questions

7. Figure out how traceroute works by looking at the packet capture I did while running traceroute
8. Look at the stanford-to-laptop (or vice versa) traceroute outputs
    a. Which hop took the longest time
    b. How are the delays correlated to the locations of the IP addresses (or distances between routers) on the path

...Questions

9. Are routes to and from another host the same or different?
10. Look at netstat output when ssh session from my laptop to “login.iitb.ac.in” was on
    (Logging in to “login.iitb” results in to machine “surya” (a faculty server machine))
    a. Any interesting observations?

...Questions

….. *Continue asking questions and answering them yourselves*

At 5pm - submit lab05.txt and any traces you captured as a single tar file online on moodle.