Week#11 – Starting from April 4 – 2016

PART #1

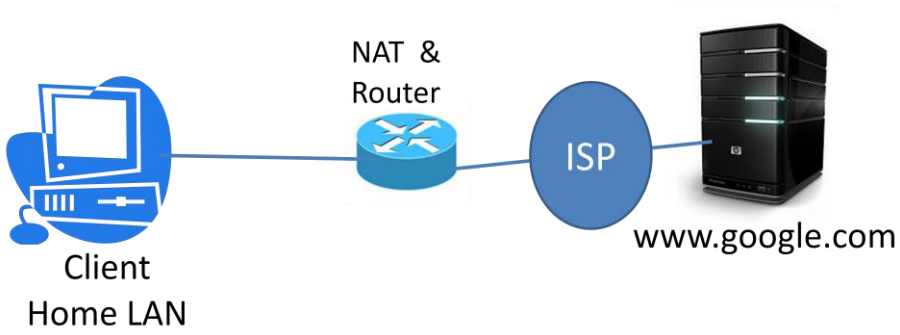
Analyse NAT protocol using Wireshark.

1.Learning objectives:

Investigate the behavior of the NAT protocol.

2. Test Scenario

As shown below, there is a home network connected through a NAT to an ISP.



2 trace files are provided to you.

i) NAT_home_side

captured trace file from of the communication happened between CLIENT and NAT router,

ii) NAT_ISP_side.

captured trace file from the communication happened between NAT router and Google Server.

With the help of these two files analyse the following

(Note that, in the trace file, there are many HTTP requests, originating to different servers. You need to focus only on the communication between client and web server www.google.com. [64.233.169.104] ;You may filter using expression " http && IP.addr == 64.233.169.104 " in the filter field]

A. HTTP GET request datagram sent by Client in the home LAN to www.google.com .

Time of sending			Any remarks
	Wireshark Frame No		
HTTP			
TCP	Source Port address		
	Destination port address		
IP	Source address		
	Destination address		
	Version		
	Header length		
	TTL		

	Checksum		
	Flag (Hex)		

B. HTTP GET request datagram sent by NAT router to www.google.com

Time of sending			Remarks / Reason
HTTP	Any change in the content?	Yes / No	
TCP	Source Port address		
	Destination port address		
IP	Source address		
	Destination address		
	Version		
	Header length		
	TTL		
	Checksum		
	Flag (Hex)		

C. HTTP 200 OK reply message from www.google.com to the NAT router

Time of Receiving			Remarks / Reason
HTTP			
TCP	Source Port address		
	Destination port address		
IP	Source address		
	Destination address		
	Version		
	Header length		
	TTL		
	Checksum		
	Flag (Hex)		

D. HTTP 200 OK reply message from NAT router to the client of Home LAN.

Time of Receiving			Remarks / Reason
HTTP			
TCP	Source Port address		
	Destination port address		
IP	Source address		
	Destination address		

	Version		
	Header length		
	TTL		
	Checksum		
	Flag (Hex)		

E. Contents of NAT table

Derive the contents of NAT from the previous analysis.

Private -Home LAN		Public ISP	
IP address	Port	IP Address	Port Address