

Name: _____

CS422 Homework #5

Turn in to the TAs by 5:00 P.M. Wednesday, April 9th

Consider a wireless router implementing NAT (the version of NAT that handles protocol ports). The wireless router has acquired a globally valid IPv4 address of 128.10.59.4. Assume there are two computers behind wireless router, connected via Wi-Fi, and each computer is running a web browser that is communicating with Google (74.125.225.130). Suppose the wireless router uses the 192.168.0.0/16 IPv4 block of private addresses, and assume the router assigned local host addresses from 192.168.0.128/25.

1. What is the maximum number of hosts that can connect to the wireless router?
2. Assume the web browsers on each of the two computers happen to acquire the same local protocol port from their respective operating system (50999). Show a table that lists how the wireless router can map the addresses and ports on packets traveling out to the Internet and packets coming in from the Internet.
3. Draw a diagram that shows a cloud for the Internet, a wireless router, and the two local hosts. On the diagram list the IP addresses and protocol port numbers on each link for two datagrams traveling outbound (one from each host), and two replies traveling inbound (four datagrams total, but show the datagrams as they travel over each link).