

**Problem Set 2 (due February 13, 2012).  
[100 points]**

**Important Notes:**

1. Can be done in teams of two students.
2. Late submissions will result in a 10% penalty per day (e.g., 2.5 days late result in 25% penalty).
3. You can use the Internet to get some help, but you should use your own words, examples, and code when answering the questions.

**Traffic Measurements (80 points)**

1. Setup your router with OpenWrt, and the corresponding development SDK. Try out the HelloWorld program and install it on the router.
2. Using the libpcap library examples, develop a program that monitors the traffic and maintains a small table with real time statistics of *uplink* and *downlink* traffic: UDP, TCP, DNS, HTTP (to/from port 80), and number of live TCP/UDP sessions.
3. Your program (running on the router) should periodically report (every 30 seconds) the last period statistics to a udp/tcp server program running on login.ccs.neu.edu (or another server in the College). The statistics should be logged to a file.
4. Prepare a 10 minutes presentation to be given in class on 2/13.
5. Optional: add any interesting statistics you can think of (be creative).

**Final Project Proposal (20 points)**

Submit a one-page proposal for your project. Provide supporting documentation such as components/devices/libraries your will need/use.