Test the Simple Router

# Disclaimer

The procedure described here and the associated script are provided for your information. This is what I plan to test your router, but I reserve the rights to test your routers in any other way without notice. You should make sure that your router implements all the required functionality correctly. Also note that the script is a simple Perl script to automate the tests. You can always test your routers manually by issuing ping, traceroute, wget etc. from command-line.

# Files

The following files should present in your working directory:

* test1.pl, the test script
* Makefile and source code
* Topology files from your assignment email, e.g., vnltopoXX.iplist, where XX is the topology number.
* rtable, the routing table file, also part of your assignment email.

# Tests

1. re-compile binary:

*make clean;*

*make;*

2. start the router:

./sr -t XX -r rtable –l log;

3. open another terminal, test ping, traceroute and web.

./test1.pl vnltopoXX.iplist ping all;

./test1.pl vnltopoXX.iplist tr all; (*only for students who were in CS425 last Fall*)

./test1.pl vnltopoXX.iplist web all;

The above tests ping/traceroute/web all the servers behind your router. A working router should be able to breeze through these tests.

In most cases the ping test should return 100%. If your router has persistent packet loss, there's something wrong with the router.

To manually run the web test, remember that the web server is running on port16280. So you can run a web browser from a CS machine, or use command-line tool such as lynx (which provides text-based interactive browsing), or wget (which downloads the web page) to access the URL:

http://ServerIP:16280/

Once you see the web page, you can follow the instructions to download other files or access other services on the server. In particular, I plan to test your router by downloading a 64MB file. You can try that on command-line as follows:

wget http://ServerIP:16280/64MB.bin -O /dev/null

With a correctly implemented router, this download should be done within a minute or two.

4. Eexamine the log file:

tcpdump -r logfile;

Look for correct behavior according to the required functionality, e.g., only send ARP request for the first packet and not later packets due to ARP caching.