

# CSE 364 Home Work Project 1

*Assigned: Tue, Jan 25*

*Due: Tues, Feb 08, 9:30AM*

*Late submissions will not be accepted*

*Group (of two) effort*

## Goal:

The primary goal for this project is to familiarize yourself with basic network performance measurements. You will write a client server program. where the client will send probe packets to the server in order to measure the network bandwidth and RTT. Describe how you measure the bandwidth and RTT along with your results (with standard deviations, time of day etc.) in a brief report. You may find the function `gettimeofday()` to be useful in measuring time. You can use the sample program discussed in class as the basis for your project (or you can develop your program from scratch). In order to actually measure the network, we will run our program under planetlab.

## Plan:

- Develop and fully debug your program on the Cushing 208 lab. machines

- Apply for a account in planet-lab at

<https://www.planet-lab.org/db/accounts/showaup.php>

Remember, you are signing a document agreeing to the acceptable use policy. Basically, most anything that you can do within ND is acceptable.

- Once I receive your application, I will enable your account.

- Once your account is enabled, login using the password that you had chosen and upload the ssh public key (by clicking on "Manage keys" option). Instructions on how to create a key is available at

<https://www.planet-lab.org/db/accounts/showaup.php>

- Once your key is uploaded, you will be able to login to the class account using the command `'ssh -l notredame_cse364 <planetlab node>'`. Copy your program that you compiled in Cushing 208 machines to run your experiments over the wide area network.

Run your client-server experiments between two planetlab machines.  
Remember, the results will have wide variance, always repeat your experiments and report the standard deviations and means.

Right now, I've created access to the following planetlab nodes:

130.194.64.162  
130.194.64.163  
200-102-209-151.paemt7001.t.brasiltelecom.net.br  
200-102-209-152.paemt7001.t.brasiltelecom.net.br  
csplanetlab1.kaist.ac.kr  
csplanetlab2.kaist.ac.kr  
planetlab01.ethz.ch  
planetlab02.ethz.ch  
planetlab1.cs.msu.su  
planetlab1.cs.vu.nl  
planetlab1.csail.mit.edu  
planetlab1.cse.nd.edu  
planetlab1.hiit.fi  
planetlab1.iitb.ac.in  
planetlab1.inria.fr  
planetlab1.millennium.berkeley.edu  
planetlab1.pop-rj.rnp.br  
planetlab1.tau.ac.il  
planetlab1.xeno.cl.cam.ac.uk  
planetlab2.cs.msu.su  
planetlab2.cs.vu.nl  
planetlab2.csail.mit.edu  
planetlab2.cse.nd.edu  
planetlab2.hiit.fi  
planetlab2.iitb.ac.in  
planetlab2.inria.fr  
planetlab2.millennium.berkeley.edu  
planetlab2.pop-rj.rnp.br  
planetlab2.tau.ac.il  
planetlab2.xeno.cl.cam.ac.uk  
soccf-planet-001.comp.nus.edu.sg  
soccf-planet-002.comp.nus.edu.sg  
thu1.6planetlab.edu.cn  
thu2.6planetlab.edu.cn

These nodes are spread across the globe. Let me know if you want access to another country.