Computer Network Programming

Class: ECS 308/405 (MW 5:30–6:20PM)  
Course code: 1312  
Lab: ECS 405 (MW 6:30–7:45PM)  
Instructor: Nathan Pickrell  
Lab/Office Hours: ECS 405/408 Th 7:45-8:45

Course Objectives

To introduce a variety of methods used in building programs that run on multiple machines on a network.

Prerequisites

CECS 326 (Operating Systems). Knowledge of C and Unix/Linux is required.

Books

The text for this course is *Internetworking with TCP/IP (Volume III — Client-Server Applications and Programming)*, Linux/POSIX sockets version by Comer and Stevens.

Other Materials

You will be issued a class account that is good on the computers in the course lab. Online manuals will be available using that account. Source code given in the book can be obtained from the instructor’s account. The lecture slides are available in the Campus bookstore. They are also available in `/volper/classes/472/lectures/` and on cheetah via the web URL `http://cheetah.cecs.csulb.edu/CECS472/` Other items, including copies of previous homework and exams, may be found in the instructor’s account in: `/volper/classes/472/old/`

Structure of the Course

There will be many programming assignments, two midterms, and a final. The assignments will be worth 30% of the grade, each midterm will be worth 20%, the final will be worth 30% of the grade.

Laboratory

Your working environment for Network Programming is the CSULB CECS network. There are many machines on this network, and they are accessible in many different ways. Some assignments will specify the use of specific machines, others will allow you to choose your machine. The lab will be ECS-405. It contains the machines assigned to this course, but you may login to these machines from other rooms as well. You are also welcome to do some of your development on other CECS machines, but make sure that your programs run in the mixed environment we have in 405. Because 405 is used by the System Administration course, some machines in this room are maintained by student system administrators. If you find a machine doesn’t work, move to another, report the problem machine to the instructor (so he can have the student administrator of that machine fix it). Because of the presence of student administrators this lab is “separated” from the other labs, that is, your account in this lab is different from those in the other labs.

Remote Access

If you wish to access the lab from elsewhere in the building, first ssh/telnet to `cheetah.cecs.csulb.edu`, then you may ssh/telnet/rlogin to anything in the lab. If you wish to access the lab from the internet, you must use ssh only to port 2022. On Unix/Linux computers this may be done with: `ssh -p 2022 csa472xx@cheetah.cecs.csulb.edu`. If you are on a Windows computer, I recommend downloading and using PuTTY.

Homework

Homework is due in the lab on the date indicated on the assignment. Homework may be submitted early (no penalty). Late submissions will be penalized 5 points per lab that they are late. To allow for illness and emergencies, the first 50 points of late penalty you accrue during the semester will be waived. If you are examining your grade, the number of waiver points you have remaining is under the column labeled “wv”. No homework will be accepted after the last lab of the semester.

Nathan Pickrell – 25 Aug 2014
Since your programming homework will be tested using shell scripts, the files for each assignment must be in your home directory for this course and have the names specified in the homework assignment. If your files are not where they are supposed to be with the indicated names you will need to resubmit.

You are expected to test your programs on the lab machines before submission. Be sure to do a final test after you add your last comments. If you resubmit a homework a penalty will be assessed. This penalty will increase with each resubmission. The initial penalty is 0 points (i.e. the first one is free) and this penalty will increase by 5 points per resubmission. For example, your 4th resubmission will be penalized 15 points.

To view your scores, login to cheetah and run getscore.

**Course Summary**

We will cover Comer and Stevens Chapters 1–25 and 30. We will also cover broadcast and multicast programming, which are topics related to those covered in the text. From supplemental material we will cover a network programming assignment using the Common Object Request Broker Architecture (CORBA).

Final Exam: 5:00–7:00, Wednesday, 17 December 2014