

Unix System Administration

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Lecture 01 – Tuesday Jan 16

CSCI 4113, Spring 2007

Course Information

- <http://www.cs.colorado.edu/~schenkc/courses/cs>
- Use above page for all materials
 - Available from my home page
- Course Topics
 - Why no book?
 - Unix in a Nutshell, 4th Edition
 - Great reference for many unix tools and commands

Course Information (cont)

- Logistics
 - TR, ECCR 105, 5:00pm-6:15pm
 - Final Tuesday, May 9th 7:30pm-10:00pm
- Office Hours
 - ECOT 727, TR 4:00pm-4:50pm
 - More as needed by appointment
 - *schenk@colorado.edu* (better than stopping by unannounced)

Course Information (cont)

- Grading
 - 60% -- Project, all done in labs
 - 25% -- quizzes, builds on labs
 - 15% -- Final exam
- Take-home style
 - Quizzes will be like labs
 - Final exam will be cumulative and due at the exam time
 - You will be notified of quizzes ahead of time

Topics

- Basic Unix navigation
 - Directories, files, links, modes, ownership, networking
- Building a machine
 - distributions, partitioning, packages, workstations, servers
- Servers/Services
 - SSH, web, mail, DNS
- Security
 - Passwords, certificates, firewalls, logs

Class Project

- Build a machine from scratch
 - Work in teams of two or by yourself
- Ubuntu 6.10 server install
 - Minimal install with 2GB of disk space
 - 128MB ram available per machine
- Virtual machine run through VMWare
 - Vmware-server-console program in the CSEL
 - Hosted on nsa.cs.colorado.edu
 - Login with your CSEL password

Other

- **Class Format: Informal**
 - Large class
 - Ask lots of questions
- **Slides**
 - Available in OpenOffice 2.0 (it's free!) and PDF format on the web page
- **Schedule**
 - Not yet finished, but will be updated this week
 - Syllabus page will have most information

CSEL Account Creation

- Login to CUConnect -> PLUS
- Email & Passwords
- Account Activation and Passwords
- Specialty Accounts
- Login with studentID & pin
- Select 'Create account for csel.cs'
- Enter new password twice, updates within 5 minutes
- **% ssh csel.cs.colorado.edu**

Unix – a Multi-User system

- Originally developed at Bell Labs
 - Ken Thompson & Dennis Ritchie
- First release 1971
- Support for multiple processes owned by multiple users
- Two levels of users
 - Super-user (root)
 - user (regular)
- Windows has this, sort of

Root (superuser)

- Access to all files, directories, processes
 - Exceptions to this rule with SELinux, NFS
- All hardware protected by the kernel
 - access restricted to specific processes, users
- Inet ports < 1023
 - http//80, ssh//22, ftp//21, domain//53, mail//25

Joe (user)

- Joe User wants to do stuff
 - Check/receive/send email
 - Read the course web page for CSCI 4113
 - Connect to the CSEL to do homework via SSH
- Have to protect other users from each other?
 - Privacy policies, file permissions, ownership
- Protect users from themselves!
 - runaway processes, fork bombs