OS Course Working Group Results

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Outline

What's this all about?

We want to bring academia, students, industry and FreeBSD closer together for mutual benefit

- Teaching undergraduate-/graduate-level operating system courses using FreeBSD
- Several members of the academic community already teach such courses
- more generally encourage the teaching of OS courses using FreeBSD
- Industrial consumers of FreeBSD would love to see more graduating students with operating systems background, especially FreeBSD

Outline

What we discussed

- Two types of courses
  - Administrator fundamentals (how to use the system)
  - Advanced course for programmers and system developers
- Suitable content for both courses was discussed
  - Good source code examples that can be used in class
  - Areas that could help students understand FreeBSD better by letting them tinker with parts of the system and compare the results
  - Focus on real world examples that are relevant today
- What are good methods to provide content to lecturers
  - Creation of a wiki page and mailing list was proposed
  - A template for unified look should also be made available
- Teaching methods

Content ideas

- intercept a system call
- implement a basic filesystem (with a subset of functionality)
- simple TCP/IP implementation (send/receive packets)
- write a simple GEOM module
- create Netgraph module

Topics around OS development are also important to know

- source tree structure
- how to work with a version control system
- performance optimization/profiling
- Makefiles/Compilers/Warning levels
- Testing tools
- Debugging (PMC, DTrace)

Some links to courses that are already being tought

Kevin Lo provided this list of courses via mail:

- http://www.hpdc.syr.edu/~chapin/cis657/index.html
- http://www.lcs.syr.edu/faculty/bolazar/OS/index.html
- http://www.cse.chalmers.se/edu/course/EDA203/
- http://cyrus.cs.ucdavis.edu/~wu/ecs150/
- http://www.cs.ucdavis.edu/~pandey/Teaching/ECS150/ecs150_spring2011.html
- http://nsl.epfl.ch/teaching/os08/syllabus.htm[1]

[1] homeworks are based on Dragonfly, similar in concept to FreeBSD

Questions?