Crossroads
The ACM Student Magazine

Introduction

by ***William Stevenson***

Putting together an issue of *Crossroads* on "Alternative" Operating Systems was an interesting problem. There is already enough debate about what exactly constitutes an operating system. Is it just the kernel and the drivers, a la "Linux," or do we also include the utilities and development tools in the definition, a la "GNU/Linux?" At what point do we draw the line between utilities that are necessary for the OS and utilities that are in fact user applications? Much legal energy is currently focused on determining whether an internet browser is a utility that should ship as an integral part of an OS or simply an application that should remain modular to the OS.

This debate alone would keep a philosopher of Computer Science busy, and now we search to define so-called **Alternative Operating Systems**. Are they the operating systems that are simply not dominant/mainstream, e.g., Unix and Mac OS, or are they the operating systems that are fundamentally different, e.g., cluster, distributed, and embedded systems. For lack of space we leave this decision as an exercise, and hedge our bets by providing articles relevant to each of these views.

We start with an account by Eric Shamow of his groups' efforts to build a clandestine Linux cluster on a group of Apple iMac computers. By day the computers are single-user systems but by night the machines work together to solve complex problems.

Speaking of clustering, Zoran Constantinescu and Pavel Petrovic follow up by describing Q^2ADPZ, an open source system that their group designed to allow for managing distributed computing across heterogeneous systems. Closing the issue up with a different view of operating systems is Parveen Kumar Patel with an article on Active Network Node Operating Systems that support packet forwarding in active networks. In addition to our articles about operating systems, columnist Kostas Pentikousis shares an interview with noted simulationist Maurice Elzas. Each of these articles, along with additional articles, interviews, and student resources appear on our website at **http://www.acm.org/crossroads**. See you this spring when we explore interdisciplinary computer science!

Biography

William Stevenson (**billstevenson@acm.org**, **http://www.billstevenson.org**) is a graduate student at Pennsylvania State University studying to get his PhD in Computer Science. Bill's main research interests are parallel and distributed computing, numerical analysis, and scientific computing. In his spare time, Bill enjoys cooking, the outdoors, and playing with his PowerBook. Bill currently serves as Editor in Chief of *Crossroads*.