

Guest Editorial

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My first Unix machine occupied four 19-inch equipment racks and was shared by everyone in the department. Today my own personal UNIX machine can be held in one hand, yet has four times the disk space and 16 times the memory of the old departmental machine.

The computer industry has always enjoyed such rapid advances in technology, but it is only in the last five years or so that it has become practical to put “interesting” (from the researcher’s point of view) machines in a package small enough to carry anywhere.

This fast-paced change is one of the things what makes the field of Mobile Computing interesting

It also means that the boundaries of the field are not well defined. The Mobile Computing researcher needs to be familiar with work in many fields, from communication to power management, user interface to file systems, operating systems to application.

In spite of, or perhaps because of, the eclectic nature of the research, it is still possible to get many big guns together in one room to exchange ideas and present results. The Second USENIX Symposium on Mobile and Location-Independent Computing, held in the Spring of 1995, was such a meeting. In this issue of *Computing Systems* we present three of the papers from the Symposium.

“A Programming Interface for Application-Aware Adaptation in Mobile Computing,” by Brian Noble, M. Satyanarayanan, and Morgan Price, presents a strategy for applications and operation systems to collaborate in adapting to the frequent changes in resource availability inherent in the mobile computing environment. Traditional approaches either put the entire burden of location independence on the application, or attempt to completely hide mobility from the application. The authors describe their prototype mobile computing platform for supporting what they call Application-Aware Adaptation.

“Partially Connected Operation,” by L.B. Huston and P. Honeyman, describes a refinement to the authors’ previous implementation of Disconnected AFS. Partially

connected mode is a blend of regular AFS and Disconnected AFS that offers file consistency guarantees to the client while still delaying most writes to the server. The surprising result is that a client connected via SLIP line over a modem can appear to the user to be fully connected while outperforming a traditional AFS client connected via ethernet.

“Adaptive Disk Spin-down Policies for Mobile Computers,” by Fred Douglass, P. Krishnan, and Brian Bershad, attacks an easily defined problem with a clever yet easily implemented solution. When should a notebook computer’s disk be spun down so as to minimize both power consumption and user frustration? Most computers today simply apply a fixed inactivity timeout. The authors show that power consumption can be further reduced, without inconveniencing the user, by applying an adaptive timeout.

I would like to thank Peter H. Salus for suggesting this special issue and for soliciting papers from the Symposium. I would also like to thank the Symposium Program Committee: Dan Duchamp, Dan Geer, Phil Karn, Jim Kempf, and Jay Kistler, for their help in selecting papers for the Symposium. I hope you find them useful and entertaining.