Leveraging Smart Phones to Reduce Mobility Footprints

Stephen Smaldone
Rutgers University

6/18/2009 at 02:30 pm
CoRE A (Room 301)

Abstract

Today, laptops still represent the most common model for personal mobile computing. To access their personal computing environments, mobile users are forced to carry all of their computing hardware and state along with them. The Internet Suspend/Resume? (ISR) model proposes a "carry nothing" approach by encapsulating personal computing state in a virtual machine (VM) and delivering it over the Internet to a locally-obtained computer close to the user. Unfortunately, in locations with poor Internet connectivity, the demands placed on WAN bandwidth can result in unacceptable user experience.

In this talk, I demonstrate how to improve the mobile user experience by using nascent smart phone technology as a trusted personal assistant called Horatio that serves as a self-cleaning portable cache for ISR state. Since most users already carry cell phones for voice calls and texting, Horatio does not increase the size or weight of a user’s mobility footprint - there is only a small increase in energy. Finally, I describe our experimental prototype of Horatio, and present the results of our evaluation, which confirm Horatio’s ability to improve user experience even with current smart phone limitations.

This talk presents joint work with Benjamin Gilbert and Mahadev Satyanarayanan from Carnegie Mellon University, Liviu Iftode from Rutgers University, and Nilton Bila and Eyal de Lara from University of Toronto. It will be presented at the 7th Annual International Conference on Mobile Systems, Applications and Services, June 22-25, 2009 in Krakow, Poland.

Faculty Host: Liviu Iftode