Advanced Techniques for Automated Linux Kernel Memory Footprint Reduction
Dominique Chanet
Supervisor(s): Koen De Bosschere

The Linux kernel is used more and more in embedded systems. However, Linux is not designed for the kind of modularity and compactness that is necessary for these systems with very constrained memories. Previous work investigated the use of link-time binary rewriting as a means of specializing Linux for a specific combination of hardware and software. This paper proposes strategies for removing much of the overhead that cannot be removed by the previous techniques. Code coverage or profiling information is used to guide the selective removal of parts of the kernel code. These parts are then stored in a compressed form that takes considerably less memory and will be reinstated whenever they are necessary.

Analysis of Runtime Implementation Switching in OSGi Based Applications
Raf Hens
Supervisor(s): Filip De Turck and Bart Dhoedt

Although there has been an evolution in personal computing of bringing more resources towards the end user, another concept has (re)gained interest recently: thin client computing. Resources and services are hereby placed in the network and are accessible with a lightweight device. This is especially useful for mobile devices, because they are inherently resource limited, if only because they are battery powered. Other advantages are centralized data management, which makes it easier for data to be protected, and centralized application management, which relieves the end user of cumbersome installation and configuration. However, there are drawbacks such as network delay, available bandwidth and privacy issues. Therefore we propose a hybrid solution, where parts of a component based application can be offloaded selectively and dynamically, based on the current conditions and preferences. A software application framework to support this offloading, transparently towards end user and application developer, is in development.
7e UGent - FirW
Doctoraatssymposium

14h00 | Het Pand | Onderbergen 1 | 9000 Gent
woensdag 29 november 2006