

Open Source Software & Software Devices

Introduction to Libre Software

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Máster Software Libre, 2009-2010. A Coruña Edition

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Introduction

- This work is a small review of the current state of the art regarding Open Source-related Operating Systems for mobile devices
- Operating Systems will be chosen both for their market share or their relevance

Symbian

- Symbian is still the most used mobile operating system
- Since the iPhone launch, Symbian is losing track
- It was the OS of choice for Nokia, Motorola, Sony Ericsson, Siemens. . .
 - Core development was centralized
 - User Interfaces were adapted and customized for each manufacturer.
- It is currently being opened under the Symbian Foundation
 - Code will be available during the process royalty free for members
 - It will be free for all once the process is over
 - Their selected license will be the Eclipse Public License

Android

- Software stack for mobile devices including operating system, middleware and key applications
- Initially developed by Google, later by the Open Handset Alliance
- Licensed under the Apache Software License
- Some criticism exists due to the possibility for manufacturers to hold their changes and modifications due to the license chosen

Maemo

- Software platform mostly based on open source code
- Developed in collaboration with projects such as the Linux kernel, Debian, Gnome and many others
- Mostly a GNU / Linux distribution with closed proprietary software from Nokia and a phone stack
- While not being used in the current version, plans are that Nokia and Intel will start using oFono, and open source telephony stack
- Derivative project Mer aims to provide a fully open source system

Moblin

- Targets mobile devices such as netbooks and MIDs
- Built around the Intel Atom Processor
- Designed to minimize boot times and power consumption.

WebOS

- Based on a Linux 2.6 kernel
- Runs several open source components
- Applies a proprietary layer over them, referred to as the Core OS
- Based on WebKit
- Development done with HTML, CSS and JavaScript

Openmoko

- Designed to provide end users with the ability to modify the operating system and software stack
- Originally focused at providing both hardware and software
- Focused on software nowadays

Bada

- New smartphone operating system from Samsung
- Targeted at low-cost phones
- Uses terms like “open” and “free” but no info has been shown yet
- It is said to be able to run on Linux kernels
- Samsung is still present in the Symbian Foundation, LiMo Foundation and the Open Handset Alliance

iPhone OS

- Built on top of the Darwin Core (Open Source BSD kernel), unavailable for other platforms than x86
- Interesting relationship with Open Source third party applications
 - Apple SDK's terms of use put a NDA on the APIs, limiting developers ability to release code
 - NDA was later removed
 - Apple's private keys for signing still put problems to licenses like GPLv3

LiMo

- LiMo Foundation is an industry consortium using a Linux-based operating system.
- Platform consisting of Member contributions and Open Source technologies
- Open development, but conditioned to the OEM decisions

Mobilinux

- Operating system and development platform.
- Seems a low level layer to build under LiMo, Android, other systems.

Conclusions

- Open Source Software is getting a great push in the Mobile Devices Market
- Linux Kernel is one of the most used solutions, used in WebOS, Android, Maemo, OpenMoko, LiMo, Mobilinux
- Shared development costs is one of the main reasons to use Open Source solutions
- Proprietary solutions are still used for specific components.
- Openness during development is not likely to affect and benefit end-users

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