Booting your Android and Linux in 6 seconds!

fastBooting based on hibernation/resume

Our fastBooting technology can be applied in various smart devices, particularly in automotive electronics, smart TV, or set-up boxes. Although Android system can increase product value, the booting time (normally 30-50 seconds) does not meet consumers' expectation. By applying fastBooting, you can easily solve the problem.

Booting on Android

fastBooting can massively reduce the size of the hibernation file. The reduced hibernation file can be as small as 30-50MB on Android 2.1-4.1. For systems with 2G memory and 20MB/s read speed (eMMC), loading time can be decreased from 100 seconds to 2.5 seconds.

Fixed Booting Time

fastBooting is highly optimized in Android/ Linux. Therefore there is no direct relationship between booting time and size of memory or software complexity. No matter how many applications were installed or how many applications are executed, booting time will be the same.

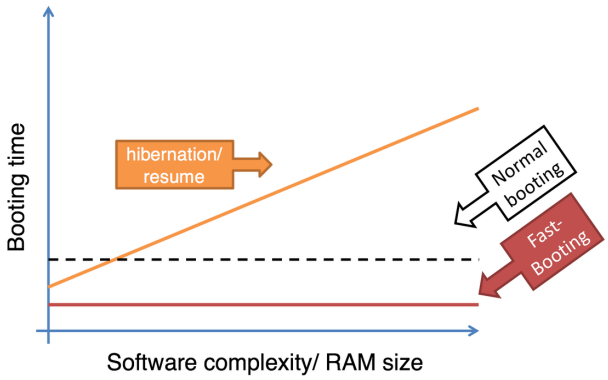

Figure 1.

Portable

fastBooting, which is written by C language, is an extension function based on Linux and Tuxonice. The program will not directly access the hardware. It is highly portable. We can even use the same program on both x86 and ARM.

Various Licensing Structure

We provide source code authorization or binary authorization. Further development support can be discussed.

Global Patent Portfolio

This technology had already patented in Taiwan, the United States, and Korea. Patent is pending in China. The satellite technologies, including "dynamic read requests reordering" and "further hibernation file optimization", have filed for patents in Taiwan, the United States, China, Korea, Japan, and Germany.

Efficiently rebuild hibernation file

Unlike conventional hibernation methods, which require fully reconstruction of hibernation file, **fastBooting** only records the differences between last two hibernations. This can speed up the construction of hibernation file and

effectively extends the life time of flash drives.

About FastBooting technology

Booting time includes: "device initialization" and "loading time of the hibernation file from flash drive to RAM". Device initialization time usually takes 2-4 seconds. As shown in figure 2, the hibernation file loading time of a device with 2GB memory takes about 100 seconds. As shown in figure 3, by reducing the size of hibernation file to 50MB, fastBooting can reduce the loading time significantly, from 100 seconds to 2.5 seconds (under the read speed of 20MB/ sec).

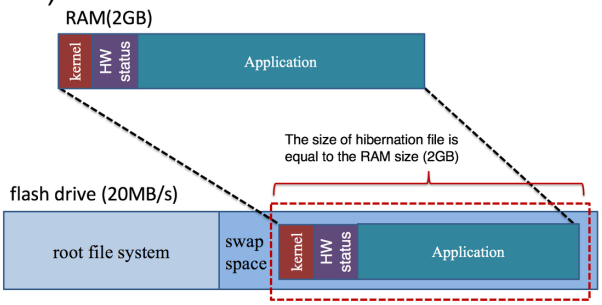

Figure 2.

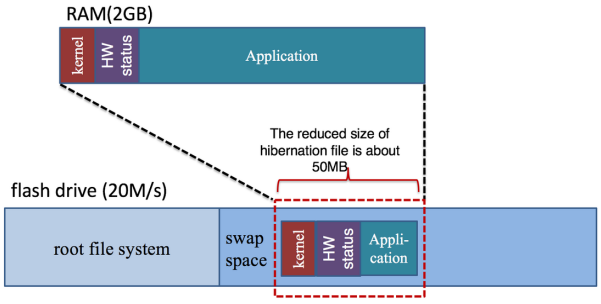

Figure 3.

Publications related to our technology

Below are the publications about this technology from well-known organizations.

1. Kunhoon Baik, Saena Kim, Suchang Woo, Jinhee Choi. “Boosting up Embedded Linux device: experience on Linux-based Smartphone,” Proceedings of the Linux Symposium, 2010
2. Yoshiya Hirase. Faster Resume For Energy Savings on MeeGo, eLinux, April 13, 2011
3. Xia Yang, Nan Sang, Alves-Foss, J. “Shortening the Boot Time of Android OS,” IEEE Computer

Table 1. Compare FastBooting with other technologies

	fastBooting	Company A	Company B	Company C	Company D	Company E
pros.	Booting more quickly, portable, patented	A hardware solution and does not need OS source, patented	A firmware solution and does not need OS source, patented	N/A	N/A	N/A
cons.	Need the source code of Linux kernel	may need two flash drives. The booting time is a little slow.	It seems does not support modern OS and processors.	Software complexity could increase booting time. having no patent?	having no patent?	The booting is 2X slow.

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