ABSTRACT

Embedded Filesystem Design and Implementation

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An embedded filesystem is an important part of an EROTS. With the price of hardware goes down as well as the capability is higher and higher, it be need seriously than any time before.

DeltaFILE is an Embedded Filesystem compatible with MS-DOS's FAT, which manage a filesystem with a bitmap-liked structure, but them are not the same in real-time response, configurability, transplantability and other aspects, which are come from the different architecture.

An embedded filesystem's duty in an ERTOS is manage the devices' I/O and file's I/O, according to this characteristic, we divided whole filesystem into three parts: device driver, buffer manager and filesystem implementation, and based on all above, a filesystem standard API defined by POSIX. In this thesis, we discuss the design and implementation of this filesystem in detail, esp. in areas that different with normal desktop filesystem.

keyword: ERTOS, Embedded Filesystem, FAT