

# FUZIX for Mini-M68k board

## Installation

1. Upgrade the BIOS to version 10.3. This is mandatory.
2. Extract 'fuzix.img' from the 1Mb tarball, currently 'fuzix.01.tar.bz2'. The diskimage file 'fuzix.img' is >40Mb.
3. Using a CF card which is larger than, say, 48Mb, copy the disk image to the card; viz., Linux:  

```
dd if=fuzix.img of=/dev/sd? bs=1048576          ? = b,c,d, whatever
```
4. Boot the Mini-M68k board with the MF/PIC used for the serial console and the CF card attachment.
5. At the command prompt, boot Fuzix with either BOOT.CMD or FUZ.CMD. Note that Fuzix must be booted in supervisor mode. The command files insure this.
6. Log into Fuzix as 'root'; there is no password.
7. Terminate fuzix with 'bye' or 'shutdown'.

## Implementation Notes

1. The binary installation of the full FUZIX system is provided in a 1MB tar.bz2 file which expands to 48MB and is generally expanded to a 64MB Compact Flash card. The installation contains the BIOS start-up directory, and the full FUZIX filesystem (32MB).
2. The BIOS must be upgraded to 10.3 or later. Either BOOT.CMD or FUZ.CMD may be used to boot FUZIX from the BIOS shell.
3. The FUZIX filesystem is specified at the 'init' prompt "bootdev>" as 'hda2' (no quotes). 'hda3' is a swap partition, not used at this time.
4. Log in as 'root'. There is no password unless you later create one.
5. The system you have booted is closely akin to Unix System V, version 7. Some of the source code of the utilities comes directly from this Unix release which has been placed in the public domain.
6. Always shut the system down with 'shutdown'. Do not use 'halt' or 'reboot' as only 'shutdown' properly dismounts the file system. If you goof, you will have a lengthy file system check at the next boot (or two). Do the full check.
7. The original Bourne shell from System V is not as sophisticated as Linux 'bash', the "Bourne again shell."
8. My opinion is that 'ls -l' is better than separate utility 'll'. 'sh' does not have aliases.

NB: The kernel source is in 'FUZIX-master/Kernel/platform-rbc-miniM68k'; thus 'FUZIX-master/Makefile' must be edited to say "TARGET=rbc-miniM68k". Until I get it up on "github", you'll have to get the tarball directly from me.

!!!! Oddities in the overall 68000 Make require compilation with GCC 10.3.0 or 12.3.0 configured in a particular way. Binutils 2.37 or 2.39 will also require special configuration. This is the biggest pain in getting the entire file system to compile. The kernel does not seem to be so sensitive, and I have used 4 other m68k-..-gcc cross compilers to make good versions of it which run correctly.

Updated kernels should be unzipped and copied to the FUZIX directory in the BIOS's FAT filesystem on partition 1 of the CF card.

-JRC 31-Dec-2022