

Tabelle 1

General:

Blocksize for the Example is 64 byte. All numbers below are calculated to this specific blocksize.

The Example shows a 32KiB Volume called „blafasel“ with „small file“ and „large file“ and the empty directory „directory“ in the root-directory.

File size is limited to 64KiB. All fields are little endian.

Possible nodes:

Superblock := must be in block 0x00, contains file system meta data such as blocksize, first block and number of blocks. The Superblock is directly followed by the root directory dir-node.

File node := contains file meta data and the first 46 bytes of a file. Subsequent file data is stored in chained file-extend nodes.

Directory node := contains directory meta data and the first 23 block-pointers to files and directories in that directory. Subsequent dir entries are stored in chained dir-extend-nodes.

Formating:

The first byte of every block is set to 0xFF, a superblock and the root-dir-node is created.

Directory traversing:

Iterate over dir entries in superblock, dir nodes and dir extend nodes. Parent directories can be found in the 'parent entry'. 0x0000 means root directory.

Reading:

Get the data from file and file extend nodes.

Writing data / creating directories:

Traverse all entries in the current directory to check for already existing file name.

Find a block with the first byte == 0xFF, create dir or file entry, write data and find next empty block if necessary.

Update the next free dir entry in the current directory if available. If not add a directory extend and store the dir entry there.

Optional: create Free Block List in RAM when mounting volume

Very optional: store FBL also.

Bytes	Block 0 (superblock)		Block 1		Block 2		Block 3		Block 4		Block 5		Block 6	
0	file system type	0x01	entry type	0x03 := dir	entry type	0x01 := file	entry type	0x01 := file	entry type	0x02 := extend	entry type	0x03 := dir	entry type	0x04 := dir ext.
1	block size	0x02 := 64 byte	Dir extend	0x0000	File extend	0x0000	File extend	0x0004	File extend	0x0000	Dir extend	0x0006	Dir extend	0x0000
2	first block	0x01												
3	Reserved 1	0x00							Reserved 1	0x0000			Reserved 1	0x0000
4	num blocks	512								47			dir entry	0x0000
5										48				
6										49			dir entry	0x0000
7										50				
8										51			dir entry	0x0000
9										52	dir name	terminated unused bytes must be filled with 0x00	dir entry	0x0000
10										53			dir entry	0x0000
11	file system name	"filesys", String is not NULL terminated unused bytes must be filled with 0x00	dir name	"", String is not NULL terminated unused bytes must be filled with 0x00	file name	"small file", String is not NULL terminated unused bytes must be filled with 0x00	file name	"split file", String is not NULL terminated unused bytes must be filled with 0x00	File data	54			dir entry	0x0000
12										55			dir entry	0x0000
13										56			dir entry	0x0000
14										57			dir entry	0x0000
15			attributes	0x00	attributes	0x00	attributes	0x00		58	attributes	0x00		
16			Parent dir entry	0x0000	size	0x0010	size	0x0040		59	Parent dir entry	0x0001	dir entry	0x0000
17										60				
18			dir entry 1	0x0002		1		1			dir entry 1	0x0000	dir entry	0x0000
19			dir entry 2	0x0003		2		2			dir entry 2	0x0000	dir entry	0x0000
20						3		3						
21						4		4			dir entry 3	0x0000	dir entry	0x0000
22			dir entry 3	0x0005		5		5						
23						6		6			dir entry 4	0x0000	dir entry	0x0000
24			dir entry 4	0x0000		7		7						
25					File data	8		8			dir entry 5	0x0000	dir entry	0x0000
26			dir entry 5	0x0000		9		9						
27						10		10			dir entry 6	0x0000	dir entry	0x0000
28			dir entry 6	0x0000		11		11						
29						12		12			dir entry 7	0x0000	dir entry	0x0000
30			dir entry 7	0x0000		13		13						
31						14		14			dir entry 8	0x0000	dir entry	0x0000
32			dir entry 8	0x0000		15		15						
33						16		16			dir entry 9	0x0000	dir entry	0x0000
34			dir entry 9	0x0000				17						
35								18			dir entry 10	0x0000	dir entry	0x0000
36			dir entry 10	0x0000				19						
37								20			dir entry 11	0x0000	dir entry	0x0000
38			dir entry 11	0x0000				21						
39								22			dir entry 12	0x0000	dir entry	0x0000
40			dir entry 12	0x0000				23		Unused				
41	Unused							24			dir entry 13	0x0000	dir entry	0x0000
42			dir entry 13	0x0000				25						
43								26			dir entry 14	0x0000	dir entry	0x0000
44			dir entry 14	0x0000				27						
45								28			dir entry 15	0x0000	dir entry	0x0000
46			dir entry 15	0x0000				29						
47								30			dir entry 16	0x0000	dir entry	0x0000
48			dir entry 16	0x0000		Unused		31						
49								32			dir entry 17	0x0000	dir entry	0x0000
50			dir entry 17	0x0000				33						
51								34			dir entry 18	0x0000	dir entry	0x0000
52			dir entry 18	0x0000				35						
53								36			dir entry 19	0x0000	dir entry	0x0000
54			dir entry 19	0x0000				37						
55								38			dir entry 20	0x0000	dir entry	0x0000
56			dir entry 20	0x0000				39						
57								40			dir entry 21	0x0000	dir entry	0x0000
58			dir entry 21	0x0000				41						
59								42			dir entry 22	0x0000	dir entry	0x0000
60			dir entry 22	0x0000				43						
61								44			dir entry 23	0x0000	dir entry	0x0000
62			dir entry 23	0x0000				45						
63								46						