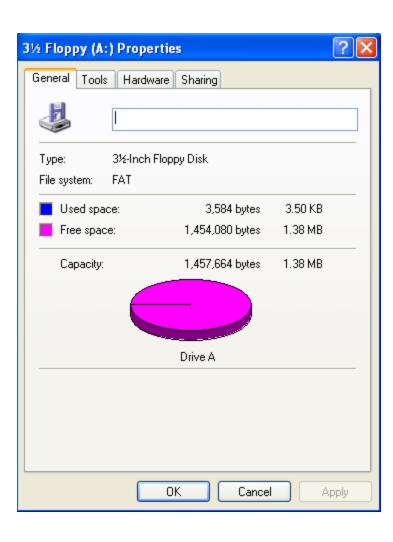
Introduction to Computer Forensics and Security 6G7Z1009

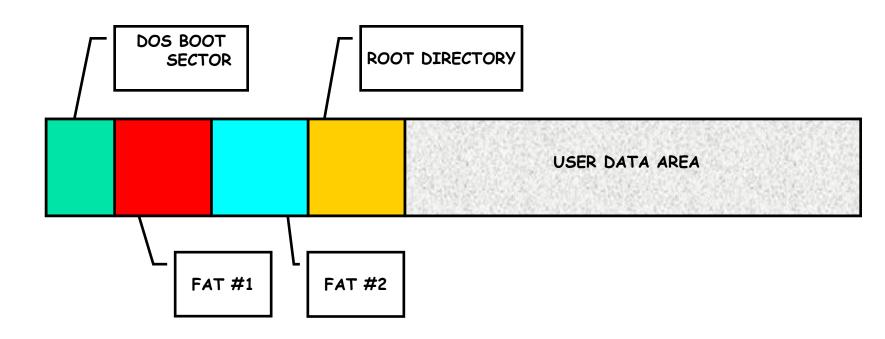
FAT



FAT File System

- Four parts
 - Volume boot record
 - File allocation tables
 - Root directory
 - User data area
- Types
 - □ FAT 12, 16, 32 bits; cluster address size
 - FAT1 and FAT2; first and second copy of FAT
 - □ Floppy: FAT12

FAT12/16 Structure



DOS Boot Sector

- Usually 512 Bytes in Size.
- Contains:
 - Volume Name
 - Serial Number
 - Volume Type
 - Boot Code
 - Signature
 - □ ETC...

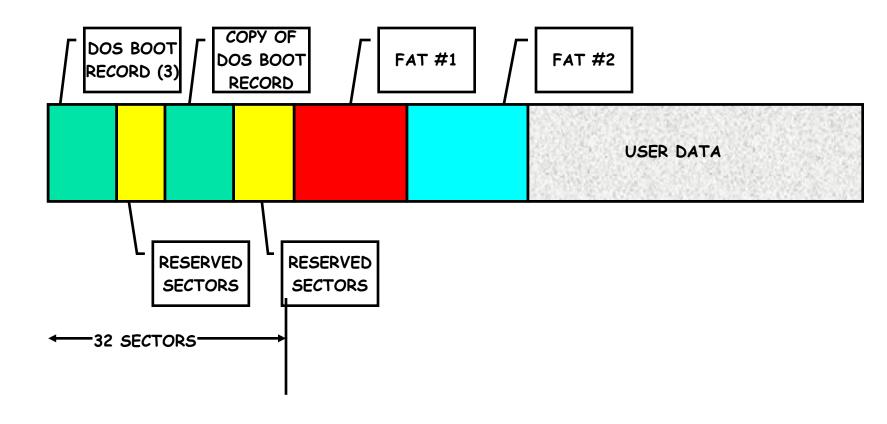
FAT 1 and FAT 2

- Tracking allocated and unallocated block/clusters on the disk.
- FAT 1 is the primarly table and FAT 2 is a copy of FAT 1.

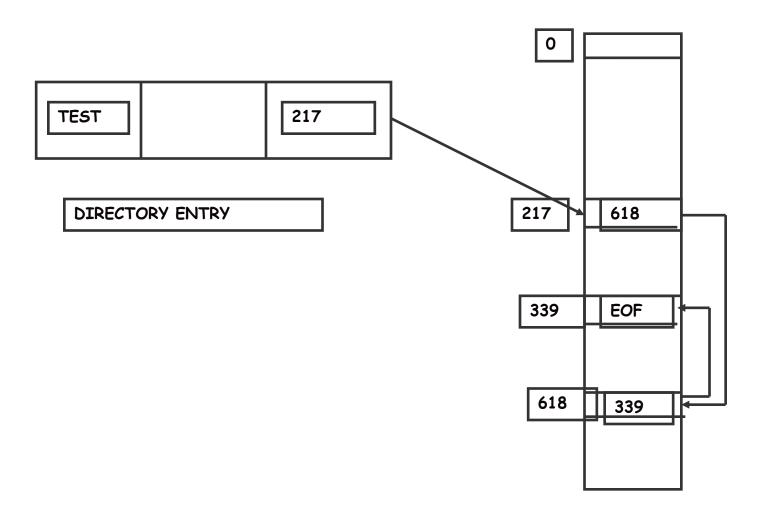
Root Directory

Its main purpose in FAT12 and FAT 16 is holding the directory entries information for the Root folder on the disk.

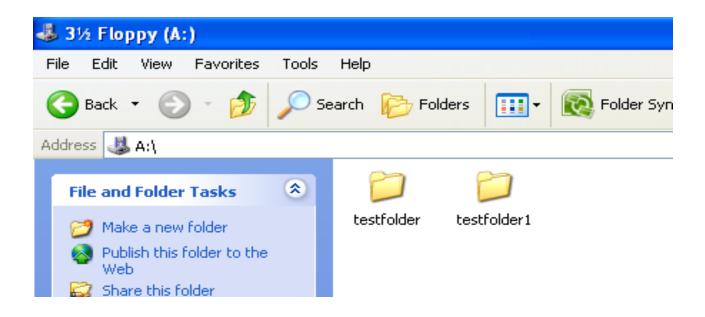
FAT32 Structure



File Allocation Table



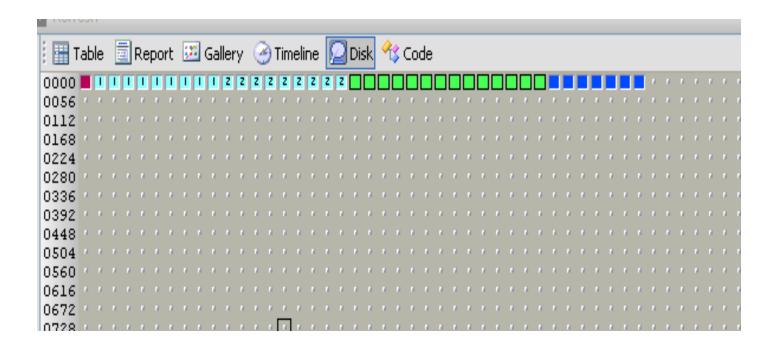
Sample FAT12/16 Disk Used



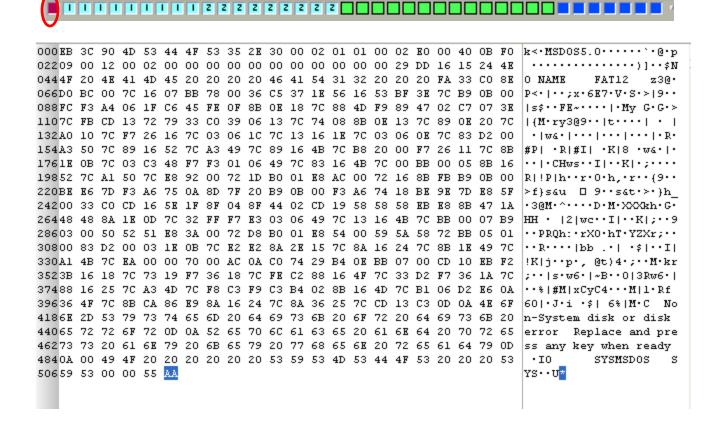
A Typical Floppy

- 1 sector per cluster
- 1 sector reserved as boot sector
- 18 sectors for FATs (9 each)
- 14 sectors for root directory

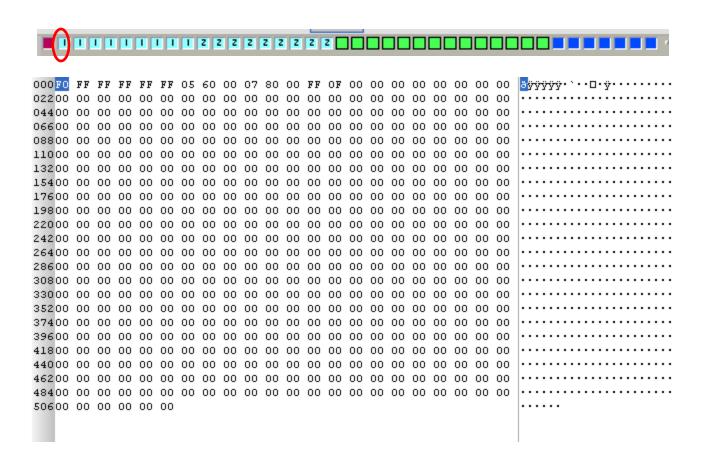
Graph Represents Sectors



Master Boot Record

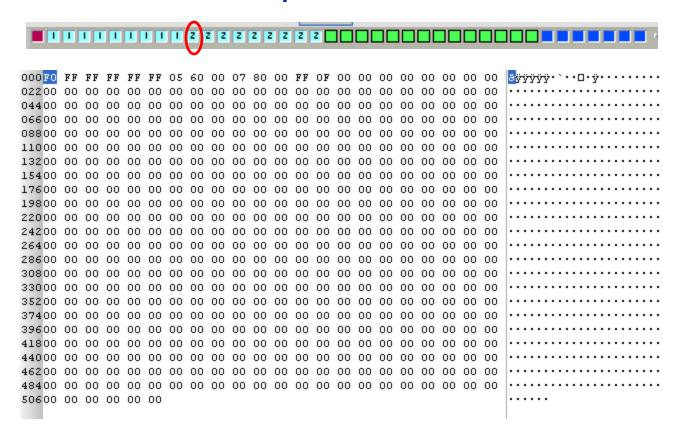


FAT 1 first 512 bytes

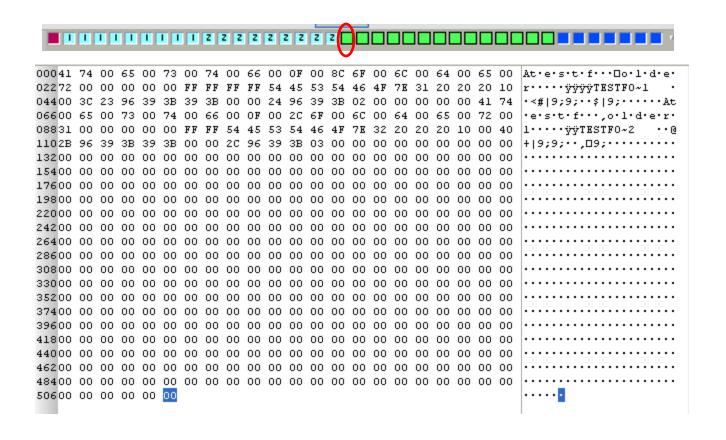


FAT 2 first 512 bytes

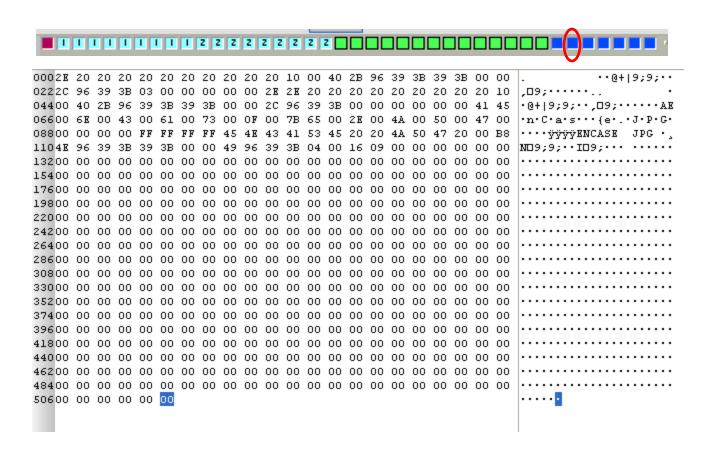
Notice it is a duplicate



FAT 12 Root Directory

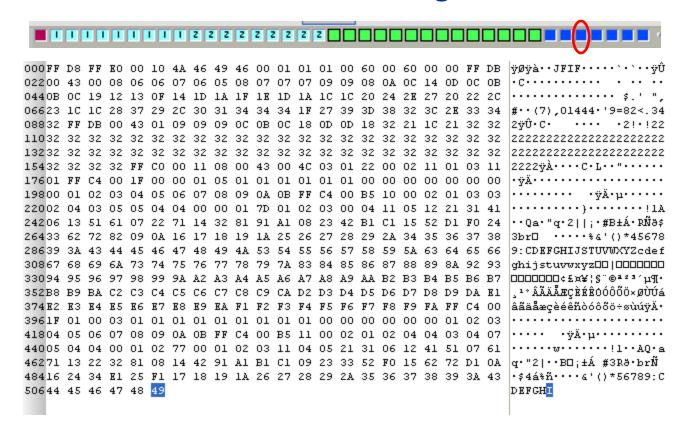


Sub directory with one file inside



JPG Image first 512 bytes

First sector for JPG image data



FAT 12/16 Structure

. FAT file system layout and data from the boot sector that is used to calculate the locations and sizes.

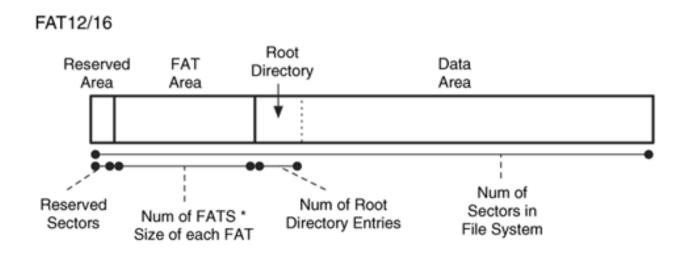


Table 10.2. Data structure for the remainder of the FAT12/16 boot sector.

Byte Range	Description	Essential
0–35	See Table 10.1.	Yes
36–36	BIOS INT13h drive number.	Nο
37–37	Not used.	Nο
38–38	Extended boot signature to identify if the next three values are valid. The signature is 0x29.	Nο
39–42	Volume serial number, which some versions of Windows will calculate based on the creation date and time.	No
43–53	Volume label in ASCII. The user chooses this value when creating the file system.	No
54–61	File system type label in ASCII. Standard values include "FAT," "FAT12," and "FAT16," but nothing is required.	No
62–509	Not used.	No
510–511	Signature value (0xAA55).	Nο

Table 10.1. Data structure for the first 36 bytes of the FAT boot sector.

Byte Range	Description	Essential
0-2	Assembly instruction to jump to boot code.	No (unless it is a bootable file system)
3-10	OEM Name in ASCII.	№
11–12	Bytes per sector. Allowed values include 512, 1024, 2048, and 4096.	Yes
13–13	Sectors per cluster (data unit). Allowed values are powers of 2, but the cluster size must be 32KB or smaller.	Yes
14-15	Size in sectors of the reserved area.	Yes
16–16	Number of FATs. Typically two for redundancy, but according to Microsoft it can be one for some small storage devices.	Yes
17–18	Maximum number of files in the root directory for FAT12 and FAT16. This is 0 for FAT32 and typically 512 for FAT16.	Yes
19–20	16-bit value of number of sectors in file system. If the number of sectors is larger than can be represented in this 2-byte value, a 4-byte value exists later in the data structure and this should be 0.	Yes
21–21	Media type. According to the Microsoft documentation, 0xf8 should be used for fixed disks and 0xf0 for removable.	No
22–23	16-bit size in sectors of each FAT for FAT12 and FAT16. For FAT32, this field is 0.	Yes
24-25	Sectors per track of storage device.	N∘
26–27	Number of heads in storage device.	No
28-31	Number of sectors before the start of partition.[1]	Νο
32–35	32-bit value of number of sectors in file system. Either this value or the 16-bit value above must be 0.	Yes

```
000 BB 3C 90 4D 53 44 4F 53 35 2K 30 00 02 01 01 00 02 KO 00 40 0B FO K</br>
022 09 00 12 00 02 00 00 00 00 00 00 00 00 00 00 29 DD 16 15 24 4E
044 4F 20 4E 41 4D 45 20 20 20 20 46 41 54 31 32 20 20 20 FA 33 CO 8K O NAME
066D0 BC 00 7C 16 07 BB 78 00 36 C5 37 1K 56 16 53 BF 3K 7C B9 0E 00 P<·[··;x·6K7·V·S·>]9··
088 FC F3 A4 06 1F C6 45 FE OF 8B OE 18 7C 88 4D F9 89 47 02 C7 07 3E ||s$..FE~...|.Mw G.G.>
1107C FB CD 13 72 79 33 CO 39 06 13 7C 74 08 8B OE 13 7C 89 OE 20 7C | (M·ry3@9··|t····| · |
132A0 10 7C F7 26 16 7C 03 06 1C 7C 13 16 1E 7C 03 06 0E /7C 83 D2 00
                                                                      | •|w&•|•••|•••|•R•
154A3 50 7C 89 16 52 7C A3 49 7C 89 16 4B 7C B8 20 00 x7 26 11 7C 8B |#P| ·R|#I| ·K|8 ·wα·|·
1761K OB 7C 03 C3 48 F7 F3 01 06 49 7C 83 16 4B 7C 00 BB 00 05 8B 16
                                                                       |••|•CHws••I|••K|•;••••
19852 7¢ A1 50 7C K8 92 00 72 1D B0 01 K8 AC 00 72 16 8B FB B9 0B 00
                                                                      R[!P[h.r.0.h, r...(9...
220BE E6 7D F3 A6 75 OA 8D 7F 20 B9 OB OO F3 A6 74 18 BE 9E 7D E8 5F
                                                                      >f}sau | 9 · · sat · > · }h
24200 38 CO CD 16 5E 1F 8F 04 8F 44 02 CD 19 58 58 58 EB E8 8B 47 1A
                                                                       -3@M·^···D·M·XXXkh·G·
26448 48 8A 1E OD 7C 32 FF F7 E3 03 06 49 7C 13 16 4B 7C BB 00 07 B9
                                                                      HH · |2|wc··I|··K|;··9
286 03 00 50 52 51 K8 3A 00 72 D8 B0 01 X8 54 00 59 5A 58 72 BB 05 01
                                                                       · · PRQh: ·rXO·hT·YZXr; · ·
30800 8$ D2 00 03 1E 0B 7C E2 E2 8A 2E 15 7C 8A 16 24 7C 8B 1E 49 7C
                                                                       ••R••••|bb .•| •$|••I|
330A1 48 7C KA 00 00 70 00 AC 0A CO 74 29 B4 0K BB 07 00 CD 10 KB F2
                                                                       |!K|j・・p・, @t)4・;・・M・kr
3523B 16 18 7C 73 19 F7 36 18 70 FK C2 88 16 4F 7C 33 D2 F7 36 1A 7C
                                                                       ; · · | s · w 6 · | ~ B · · 0 | 3 R w 6 · |
37488 16 25 7C A3 4D 7C F8 C3 F9 C3 B4 O2 8B 16 4D 7C B1 O6 D2 R6 OA
                                                                       ··%|#M|xCyC4···M|1·Rf
39636 4F 7C 8B CA 86 E9 8A 16 24 7C 8A 36 25 7C CD 13 C3 OD OA 4E 6F
                                                                       60| · J · i · $| 6%| M · C No
4186K 2D 53 79 73 74 65 6D 20 64 69 73 6B 20 6F 72 20 64 69 73 6B 20
                                                                      n-System disk or disk
44065 72 72 6F 72 0D 8A 52 65 70 6C 61 63 65 20 61 6E 64 20 70 72 65
                                                                       error Replace and pre
46273 7$ 20 61 6E 79 20 6B 65 79 20 77 68 65 6E 20 72 65 61 64 79 0D
                                                                       ss any key when ready
484 OA OO 49 4F 20 20 20 20 20 20 53 59 53 4D 53 44 4F 53 20 20 20 53
                                                                        • IO
                                                                                 SYSMSDOS
50659 53 00 00 55 🛺
                                                                       YS··U™
```

Assembly instruction to jump to boot code.

```
000 BB 3C 90 4D 53 44 4F 53 35 2E 30 00 02 01 01 00 02 E0 00 40 0B F0
                                                                        k< MSDOS5.0
02209 00 12 00 02 00 00 00 00 00 00 00 00 00 00 29 DD 16 15 24 4E
0444F 20 4E 41 4D 45 20 20 20 20 46 41 54 31 32 20 20 20 FA 33 CO 8E
066D0 BC 00 7C 16 07 BB 78 00 36 C5 37 1K 56 16 53 BF 3K 7C B9 0B 00
                                                                        ₽<・|・・;x・6E7・V・S・>|9・・
088 FC F3 A4 06 1F C6 45 FE 0F 8B 0E 18 7C 88 4D F9 89 47 02 C7 07 3Æ
                                                                        |s$..FE~...|.My G.G.>
1107C FB CD 13 72/79 33 CO 39 06 13 7C 74 08 8B OE 13 7C 89 OE 20 7C | (M·ry3@9··|t····| · |
132A0 10 7C F7 26/16 7C 03 06 1C 7C 13 16 1E 7C 03 06 0E 7C 83 D2 00
                                                                         . | wa. | . . . | . . . | . . . | . R.
154A3 50 7C 89 16 52 7C A3 49 7C 89 16 4B 7C B8 20 00 F7 26 11 7C 8B
                                                                        #P| •R|#I| •K|8 •w4•|•
1761E OB 7C 03 C/3 48 F7 F3 01 06 49 7C 83 16 4B 7C 00 BB 00 05 8B 16
                                                                        ..|.CHws..I|..K|.;....
19852 7C A1 50 7C K8 92 00 72 1D B0 01 K8 AC 00 72 16 8B FB B9 0B 00
                                                                        |R|!P|h..r.O.h,.r..{9..
220BE E6 7D F3 A6 75 OA 8D 7F 20 B9 OB OO F3 A6 74 18 BE 9E 7D E8 5F
                                                                        >f}s&u | 0 9 • · s&t • > • }h
24200 33 CO CD/16 5E 1F 8F 04 8F 44 02 CD 19 58 58 58 EB E8 8B 47 1A
                                                                        •3@M•^•••D•M•XXXkh•G•
264 48 48 8A 1E/OD 7C 32 FF F7 E3 03 06 49 7C 13 16 4B 7C BB 00 07 B9
                                                                        HH • |2|wc•·I|•·K|;••9
286 03 00 50 52 51 K8 3A 00 72 D8 B0 01 K8 54 00 59 5A 58 72 BB 05 01
                                                                        ...PRQh: .rX0.hT.YZXr;...
308 00 83 D2 00 03 1K 0B 7C K2 K2 8A 2K X5 7C 8A 16 24 7C 8B 1K 49 7C
                                                                         ••R••••|bb .•| •$|••I|
330 A1 4B 7C KA 00 00 70 00 AC 0A CO 74 29 B4 0K BB 07 00 CD 10 KB F2
                                                                         !K|j••p•, @t)4•;••M•kr
3523B 16 18 7C 73 19 F7 36 18 7C FK C2 88 16 4F 7C 33 D2 F7 36 1A 7C
                                                                        ; · · | s · w 6 · | ~ B · · 0 | 3 R w 6 · |
37488 16 25/7C A3 4D 7C F8 C3 F9 C3 B4 O2 8B 16 4D 7C B1 O6 D2 K6 OA
                                                                        | • • % | #M | xCyC4•••M|1•Rf
39636 4F 7C/8B CA 86 E9 8A 16 24 7C 8A 36 25 7C CD 13 C3 OD OA 4E 6F
                                                                        60|·J·i ·$| 6%|M·C No
4186K 2D 53 79 73 74 65 6D 20 64 69 73 6B 20 6F 72 20 64 69 73 6B 20
                                                                        n-System disk or disk
44065 72 72 6F 72 0D 0x 52 65 70 6C 61 63 65 20 61 6E 64 20 70 72 65
                                                                        error Replace and pre
46273 73 20 61 6E 79 20 6B 65 79 20 77 68 65 6E 20 72 65 61 64 79 0D
                                                                        ss any key when ready
484 OA OO 49 4F 20 20 20 20 20 20 53 59 53 4D 53 44 4F 53 20 20 20 53
                                                                         · IO
                                                                                   SYSMSDOS
506 59 53 00 00 55 AA
                                                                        YS··U™
```

Bytes 3-10 : OEM Name in ASCII (OEM) Original Equipment Manufacturer

```
000 BB 3C 90 4D 53 44 4F 53 35 2B 30 00 02 D1 01 00 02 B0 00 40 0B F0
0444F 20 4E 41 4D 45 20 20 20 20 46 41 54 31 32 20 20 20 FA 33 CO 8E
066D0 BC 00 7C 16 07 BB 78 00 36 C5 37 LK 56 16 53 BF 3E 7C B9 0B 00
OBBFC F3 A4 O6 1F C6 45 FE OF 8B OE 18 7C 88 4D F9 89 47 O2 C7 O7 3E
1107C FB CD 13 72 79 33 CO 39 06 13 7C 74 08 8B 0K 13 7C 89 0K 20 7C
132A0 10 7C F7 26 16 7C 03 06 1C 7C 13 16 1K 7C 03 06 0K 7C 83 D2 00
154A3 50 7C 89 16 52 7C A3 49 7C 89 16 4B 7C B8 20 00 F7 26 11 7C 8B
                                                                    |#P| •R|#I| •K|8 •w4•|•
1761E OB 7C 03 C3 48 F7 F3 01 06 49 7C 83 16 4B 7C 00 BB 00 05 8B 16
                                                                     ••|•CHws••I|••K|•;••••
19852 7C A1 50 7C E8 92 00 72 1D B0 01 E8 AC 00 72 16 8B FB B9 0B Ø0
                                                                    |R|!P|h..r.O.h,.r..{9..
220BK K6 7D F3 A6 75 OA 8D 7F 20 B9 OB OO F3 A6 74 18 BK 9K 7D K8 5F
                                                                    |>f}sau | 0 9 •• sat • >• }h |
24200 33 CO CD 16 5E 1F 8F 04 8F 44 02 CD 19 58 58 58 EB E8 8B 47 1A
                                                                    -3@M·^···D·M·XXXkh·G·
264 48 48 8A 1E OD 7C 32 FF F7 E3 03 06 49 7C 13 16 4B 7C BB QÓ 07 B9 HH · |2|we··I|··K|;··9
286 03 00 50 52 51 K8 3A 00 72 D8 B0 01 K8 54 00 59 5A 58 72 BB 05 01
                                                                    · · PRQh: ·rXO·hT·YZXr; · ·
30800 83 D2 00 03 1E 0B 7C E2 E2 8A 2E 15 7C 8A 16 24 7C 8B 1E 49 7C
                                                                     ••R••••|bb .•| •$|••I|
330 A1 4B 7C KA 00 00 70 00 AC 0A CO 74 29 B4 0K BB 07 00 CD 10 KB F2
                                                                    |!K|j・・p・, @t)4・;・・M・kr
3523B 16 18 7C 73 19 F7 36 18 7C FE C2 88 16 4F 7C 33 102 F7 36 1A 7C
                                                                    |;··|s·w6·|~B··0|3Rw6·|
37488 16 25 7C A3 4D 7C F8 C3 F9 C3 B4 02 8B 16 4D 7C B1 06 D2 K6 0A
                                                                    | • • % | #M | xCyC4•••M|1•Rf
39636 4F 7C 8B CA 86 E9 8A 16 24 7C 8A 36 25 7C CD/13 C3 OD OA 4E 6F
                                                                    60|·J·i ·$| 6%|M·C No
4186K 2D 53 79 73 74 65 6D 20 64 69 73 6B 20 6F 72 20 64 69 73 6B 20
                                                                    n-System disk or disk
44065 72 72 6F 72 0D 0A 52 65 70 6C 61 63 65 20 61 6E 64 20 70 72 65
                                                                    error Replace and pre
46273 73 20 61 6E 79 20 6B 65 79 20 77 68 65 6E 20 72 65 61 64 79 0D
                                                                    ss any key when ready
484 OA 00 49 4F 20 20 20 20 20 20 53 59 53 41 53 44 4F 53 20 20 20 53
                                                                      · IO
                                                                              SYSMSDOS
50659 53 00 00 55 🛺
                                                                    YS··U™
```

Bytes 11-12

Bytes per sector. Allowed values include 512, 1024, 2048, and 4096 0002 = 1 little endian (0200) = 512

```
000 BB 3C 90 4D 53 44 4F 53 35 2E 30 00 02 D1 01 00 02 E0 00 40 0B F0
02209 00 12 00 02 00 00 00 00 00 00 00 <del>00</del> 00 00 29 DD 16 15 24 4E
0444F 20 4E 41 4D 45 20 20 20 20 46 41 54 31 32 20 20 20 FA 33 CO 8E
066D0 BC 00 7C 16 07 BB 78 00 36 C5 37 1K 56 16 53 BF 3K 7C B9 0B 00
OBBFC F3 A4 O6 1F C6 45 FE OF 8B OE 18 7C 88 4D F9 89 47 O2 C7 O7 3E
1107C FB CD 13 72 79 33 CO 39 06 13 7C 74 08 8B 0K 13 7C 89 0K 20 7C
132A0 10 7C F7 26 16 7C 03 06 1C 7C 13 16 1K 7C 03 06 0K 7C 83 D2 00
154A3 50 7C 89 16 52 7C A3 49 7C 89 16 4B 7C B8 20 00 F7 26 11 7C 8B
                                                                      1761E OB 7C O3 C3 48 F7 F3 O1 O6 49 7C 83 16 4B 7C OO BB OO O5 8B 16
                                                                       ۰۰|•CHws••I|••K|•;••••
19852 7C A1 50 7C E8 92 00 72 1D B0 01 E8 AC 00 72 16 8B FB B9 0B 00
                                                                      R|!P|h.r.O.h,.r..{9..
220BK K6 7D F3 A6 75 OA 8D 7F 20 B9 OB OO F3 A6 74 18 BK 9K 7D K8 /SF
                                                                      24200 33 CO CD 16 5E 1F 8F 04 8F 44 02 CD 19 58 58 58 EB E8 8B 47 1A
                                                                      •3@M•^•••D•M•XXXkh•G•
264 48 48 8A 1E OD 7C 32 FF F7 E3 03 06 49 7C 13 16 4B 7C BB 00/07 B9
                                                                      HH · |2|wc··I|··K|;··9
286 03 00 50 52 51 K8 3A 00 72 D8 B0 01 K8 54 00 59 5A 58 72 BB 05 01
                                                                      · · PRQh: ·rXO·hT·YZXr; · ·
30800 83 D2 00 03 1E 0B 7C E2 E2 8A 2E 15 7C 8A 16 24 7C 8E/1E 49 7C
                                                                      ··R····|bb . · | · $ | · · I |
330A1 4B 7C KA 00 00 70 00 AC 0A CO 74 29 B4 0E BB 07 00 CD 10 EB F2
                                                                      |!K|j・・p・, @t)4・;・・M・kr
3523B 16 18 7C 73 19 F7 36 18 7C FK C2 88 16 4F 7C 33 D2 F7 36 1A 7C
                                                                      ; · · | s · w 6 · | ~B · · 0 | 3Rw 6 · |
37488 16 25 7C A3 4D 7C F8 C3 F9 C3 B4 02 8B 16 4D 7C/B1 06 D2 R6 0A
                                                                      ··*|#M|xCyC4···M|1·Rf
39636 4F 7C 8B CA 86 E9 8A 16 24 7C 8A 36 25 7C CD 1/3 C3 OD OA 4E 6F
                                                                      60| · J · i · $| 6%| M · C No
4186E 2D 53 79 73 74 65 6D 20 64 69 73 6B 20 6F 72/20 64 69 73 6B 20
                                                                      n-System disk or disk
44065 72 72 6F 72 0D 0A 52 65 70 6C 61 $3 65 20 $1 6E 64 20 70 72 65
                                                                      error Replace and pre
46273 73 20 61 6E 79 20 6B 65 79 20 77 68 65 6E 20 72 65 61 64 79 0D
                                                                      ss any key when ready
484 OA 00 49 4F 20 20 20 20 20 20 53 59 53 4D 53 44 4F 53 20 20 20 53
                                                                       · IO
                                                                                SYSMSDOS
506 59 53 00 00 55 🛺
                                                                      YS··U™
```

Byte 13

Sectors per cluster (data unit). Allowed values are powers of 2

01 = 1

```
000 EB 3C 90 4D 53 44 4F 53 35 2E 30 00 02 01 01 00 02 E0 00 40 0B F0
02209 00 12 00 02 00 00 00 00 00 00 00 00 00 00 29 DD 16 15 24 4E
0444F 20 4E 41 4D 45 20 20 20 20 46 41 54 31 32 20 20 20 FA 33 CO 8E
066D0 BC 00 7C 16 07 BB 78 00 36 C5 37 1K 56
                                              16 53 BF 3E 7C B9 0B 00
088FC F3 A4 06 1F C6 45 FK OF 8B OK 18 7C 88
                                              4D F9 89 47 02 C7 07 3E
1107C FB CD 13 72 79 33 CO 39 06 13 7C 74 08 8B 0E 13 7C 89 0E 20 7C
132A0 10 7C F7 26 16 7C 03 06 1C 7C 13 16 1E/7C 03 06 0E 7C 83 D2 00
154A3 50 7C 89 16 52 7C A3 49 7C 89 16 4B 7C/B8 20 00 F7 26 11 7C 8B
                                                                       #P/ ·R|#I| ·K|8 ·w4·|·
1761K OB 7C 03 C3 48 F7 F3 01 06 49 7C 83 16 4B 7C 00 BB 00 05 8B
                                                                       R|!P|h.r.O.h,.r..{9..
19852 7C A1 50 7C E8 92 00 72 1D B0 01 E8 AC 00 72 16 8B FB B9 0B 00,
220BE E6 7D F3 A6 75 OA 8D 7F 20 B9 OB OO F3 A6 74 18 BE 9E 7D E8 5F
                                                                       24200 33 CO CD 16 5E 1F 8F 04 8F 44 02 CD 1/9 58 58 58 EB E8 8B 47 1A
                                                                       -30M-^---D-M-XXXkh-G-
264 48 48 8A 1E OD 7C 32 FF F7 E3 03 06 49 7C 13 16 4B 7C BB 00 07 B9
                                                                       HH · |2|wc··I|··K|;··9
286 03 00 50 52 51 K8 3A 00 72 D8 B0 01 K8 54 00 59 5A 58 72 BE 05 01
                                                                       · · PRQh: ·rXO·hT·YZXr; · ·
30800 83 D2 00 03 1E 0B 7C E2 E2 8A 2E 15 7C 8A 16 24 7C 8B/1E 49 7C
                                                                       | •• R•••• | bb | .•| •$|••I|
330A1 4B 7C KA 00 00 70 00 AC 0A CO 74 29 B4 0E BB 07 00 ØD 10 EB F2
                                                                       |!K|j・・p・, @t)4・;・・M・kr
3523B 16 18 7C 73 19 F7 36 18 7C FK C2 88/16 4F 7C 33 D2 F7 36 1A 7C
                                                                       ; · · | s · w 6 · | ~B · · 0 | 3Rw 6 · |
37488 16 25 7C A3 4D 7C F8 C3 F9 C3 B4 O2 8B 16 4D 7C 161 O6 D2 E6 OA
                                                                       | • • % | #M| xCyC4 • • • M| 1 • Rf
39636 4F 7C 8B CA 86 E9 8A 16 24 7C 8A 36 25 7C CD 1/3 C3 OD OA 4E 6F
                                                                       60| · J · i · $| 6%| M · C No
4186K 2D 53 79 73 74 65 6D 20 64 69 73 6B 20 6F 72/20 64 69 73 6B 20
                                                                       n-System disk or disk
44065 72 72 6F 72 0D 0A 52 65 70 6C 61 63 65 20 £1 6E 64 20 70 72 65
                                                                       error Replace and pre
46273 73 20 61 68 79 20 6B 65 79 20 77 68 65 68 20 72 65 61 64 79 0D
                                                                       ss any key when ready
484 OA 00 49 4F 20 20 20 20 20 20 53 59 $3 4D \( \delta \) 44 4F 53 20 20 20 53
                                                                         · IO
                                                                                  SYSMSDOS
506 59 53 00 00 55 🛺
                                                                       YS··U™
```

Byte 14
Size in sectors of the reserved area.

01 = 1

```
000 BB 3C 90 4D 53 44 4F 53 35 2K 30 00 02 01 01 00 02 K0 00 40 0B F0
044 4F 20 4E 41 4D 45 20 20 20 20 46 41 54 31 32 20 20 20 FA 33 CO 8E
                                                                     P<・|・・;x・6至7・V・S・>|9・・
066D0 BC 00 7C 16 07 BB 78 00 36 C5 37 1K 56 16 53 BF 3K 7C B9 0B 00
088FC F3 A4 06 1F C6 45 FE OF 8B OE 18 7C 88 4D F9 89 47 02 C7 07 3E
1107C FB CD 13 72 79 33 CO 39 06 13 7C 74 08 8B 0E 13 7C 89 0E 20 7C
132A0 10 7C F7 26 16 7C 03 06 1C 7C 13 16 1R
                                             7C 03 06 OK 7C 83 D2 00
                                                                     #P1 . R|#I| . K|8 . w4. |.
154A3 50 7C 89 16 52 7C A3 49 7C 89 16 4B 7C B8 20 00 F7 26 11 7C 8B
1761K OB 7C 03 C3 48 F7 F3 01 06 49 7C 83 16 4B 7C 00 BB 00 05 8B
                                                                      •/* | • CHws•• I | • • K | • ; • • • •
19852 7C A1 50 7C E8 92 00 72 1D B0 01 E8 AC/00 72 16 8B FB B9 0B 00
                                                                     R|!P|h..r.O.h,.r..{9..
220BE E6 7D F3 A6 75 OA 8D 7F 20 B9 OB OO F3 A6 74 18 BE 9E 7D E8 5F
                                                                     24200 33 CO CD 16 5E 1F 8F 04 8F 44 02 CD 19 58 58 58 EB E8 8B 47/1A
                                                                      •3@M•^•••D•M•XXXkh•G•
264 48 48 8A 1E OD 7C 32 FF F7 E3 03 06 49 7C 13 16 4B 7C BB 00 107 B9
                                                                     HH • |2|wc•·I|•·K|;••9
286 03 00 50 52 51 K8 3A 00 72 D8 B0 01 K8 5/4 00 59 5A 58 72 BB 05 01
                                                                     · · PRQh: ·rXO·hT·YZXr; · ·
30800 83 D2 00 03 1K 0B 7C K2 K2 8A 2K 15 7C 8A 16 24 7C 8B/1K 49 7C
                                                                      ··R····|bb . · | · $ | · · I |
330A1 4B 7C KA 00 00 70 00 AC 0A CO 74 29 B4 0K BB 07 00 ØD 10 KB F2
                                                                     |!K|j・・p・, @t)4・;・・M・kr
3523B 16 18 7C 73 19 F7 36 18 7C FK C2 88 16 4F 7C 33 D2 F7 36 1A 7C
                                                                     ; · · | s · w 6 · | ~B · · 0 | 3Rw 6 · |
37488 16 25 7C A3 4D 7C F8 C3 F9 C3 B4 O2/8B 16 4D 7C 161 O6 D2 R6 OA
                                                                     ··*|#M|xCyC4···M|1·Rf
39636 4F 7C 8B CA 86 K9 8A 16 24 7C 8A 36/25 7C CD 1/2 C3 OD OA 4E 6F
                                                                     60| · J · i · $| 6%| M · C No
4186K 2D 53 79 73 74 65 6D 20 64 69 73 6E 20 6F 72/20 64 69 73 6B 20
                                                                     n-System disk or disk
44065 72 72 6F 72 0D 0A 52 65 70 6C 61 63 65 20 £1 6E 64 20 70 72 65
                                                                     error Replace and pre
46273 73 20 61 6E 79 20 6B 65 79 20 77 68 65 6E 20 72 65 61 64 79 0D
                                                                     ss any key when ready
484 OA 00 49 4F 20 20 20 20 20 20 53 59 $3 4D \( \delta \) 44 4F 53 20 20 20 53
                                                                       · IO
                                                                                SYSMSDOS
506 59 53 00 00 55 🛺
                                                                     YS··U™
```

Bytes 14 -15 Size in sectors of the reserved area. $01\ 00 = \text{little endian } (00\ 01\) = 1$

```
000 BB 3C 90 4D 53 44 4F 53 35 2K 30 00 02 01 01 00 02 K0 00 40 0B F0
02209 00 12 00 02 00 00 00 00 00 00 00 00 00 00 <del>29</del> DD 16 15 24 4E
0444F 20 4E 41 4D 45 20 20 20 20 46
                                    41 54 31 32 20 20 20 FA 33 CO 8K
                                                                        P<-|--:x-6E/7-V-S->|9--
066D0 BC 00 7C 16 07 BB 78 00 36 C5 37 1K 56 16 53 BF 3K 7C B9 0B 00
088FC F3 A4 06 1F C6 45 FE OF 8B OE 18 7C 88 4D F9/89 47 02 C7 07 3E
1107C FB CD 13 72 79 33 CO 39 06 13 7C 74 08 8B 0E/13 7C 89 0E 20 7C
132A0 10 7C F7 26 16 7C 03 06 1C 7C 13 16 1E 7C 08 06 0E 7C 83 D2 00
154A3 50 7C 89 16 52 7C A3 49 7C 89 16 4B 7C B8 20 00 F7 26 11 7C 8B
                                                                        #P|/·R|#I| ·K|8 ·w4·|·
1761E OB 7C O3 C3 48 F7 F3 O1 O6
                                 49 7C 83 16 4B
                                                 7C 00 BB 00 05 8B 16
                                                                        .•∕|.CHws..I|..K|.;....
19852 7C A1 50 7C E8 92 00 72 1D B0 01 E8 AC 00/72 16 8B FB B9 0B 00
                                                                        220BE E6 7D F3 A6 75 OA 8D 7F 20 B9 OB OO F3 A6/74 18 BE 9E 7D E8 5#
                                                                       >f}s&u | 0 9 • · s&t · > · }h |
24200 33 CO CD 16 5E 1F 8F 04 8F 44 02 CD 19 58 58 58 EB E8 8B 47/1A
                                                                        •3@M•^•••D•M•XXXkh•G•
264 48 48 8A 1E OD 7C 32 FF F7 E3 03 06 49 7C 1/3 16 4B 7C BB 00 97 B9
                                                                       HH · |2|wc··I|··K|;··9
286 03 00 50 52 51 K8 3A 00 72 D8 B0 01 K8 54 00 59 5A 58 72 BB 05 01
                                                                        · · PRQh: ·rXO·hT·YZXr; · ·
30800 83 D2 00 03 1E 0B 7C E2 E2 8A 2E 15 7C 8A 16 24 7C 8B 1E 49 7C
                                                                        ··R····|bb . · | · $ | · · I |
330A1 4B 7C KA 00 00 70 00 AC 0A CO 74 29 B4/OK BB 07 00 CD 10 KB F2
                                                                        |!K|j・・p・, @t)4・;・・M・kr
3523B 16 18 7C 73 19 F7 36 18 7C FE C2 88 16 4F 7C 33 D2 F7 36 1A 7C
                                                                        ; · · | s · w 6 · | ~B · · 0 | 3Rw 6 · |
37488 16 25 7C A3 4D 7C F8 C3 F9 C3 B4 O2 8B 16 4D 7C E1 O6 D2 R6 OA
                                                                        ··*|#M|xCyC4···M|1·Rf
39636 4F 7C 8B CA 86 E9 8A 16 24 7C 8A 36 25 7C CD 12 C3 OD OA 4E 6F
                                                                        60| · J · i · $| 6%| M · C No
4186K 2D 53 79 73 74 65 6D 20 64 69 73 6B 20 6F 72/20 64 69 73 6B 20
                                                                       n-System disk or disk
44065 72 72 6F 72 0D 0A 52 65 70 6C 61 63/65 20 61 6E 64 20 70 72 65
                                                                        error Replace and pre
46273 73 20 61 6E 79 20 6B 65 79 20 77 68 65 6E 20 72 65 61 64 79 0D
                                                                        ss any key when ready
484 OA 00 49 4F 20 20 20 20 20 20 53 59 53 4D \( \delta \) 44 4F 53 20 20 20 53
                                                                         · IO
                                                                                  SYSMSDOS
50659 53 00 00 55 🛺
                                                                        YS··U™
```

Byte 16

Number of FATs. Typically two for redundancy.

02 = 2

```
000 BB 3C 90 4D 53 44 4F 53 35 2K 30 00 02 01 01 00 02 K0 00 40 0B F0
022 09 00 12 00 02 00 00 00 00 00 00 00 00 00 00 29 DDM 16 15 24 4E
                                    41 54 31 32 20 20 20 FA 33 CO 8E
0444F 20 4E 41 4D 45 20 20 20 20 46
066D0 BC 00 7C 16 07 BB 78 00 36 C5 37 1K 56 16 53 BF 3K 7C B9 0B 00
                                                                       P<-1--:x-6E7/V-S->19--
088 FC F3 A4 06 1F C6 45 FE OF 8B OE 18 7C 88 4D F9 89 47 02 C7 07 3E
1107C FB CD 13 72 79 33 CO 39 06 13 7C 74 08 8B 0K 13/7C 89 0K 20 7C
132A0 10 7C F7 26 16 7C 03 06 1C 7C 13 16 1E 7C 03 06 0E 7C 83 D2 00
154A3 50 7C 89 16 52 7C A3 49 7C 89 16 4B 7C B8 20 00 F7 26 11 7C 8B
1761E OB 7C O3 C3 48 F7 F3 O1 O6 49 7C 83 16 4B 7C/O0 BB O0 O5 8B 16
19852 7C A1 50 7C E8 92 00 72 1D B0 01 E8 AC 00 72/16 8B FB B9 0B 00
                                                                       A|!P|h..r.O.h,.r..{9..
220BE E6 7D F3 A6 75 OA 8D 7F 20 B9 OB OO F3 A6 74 18 BE 9E 7D E8 5F
                                                                       >f}s&u | 0 9 • • s&t • > • }h
24200 33 CO CD 16 5E 1F 8F 04 8F 44 02 CD 19 58 $8 58 EB E8 8B 47/1A
                                                                        •30M•^•••D•M•XXXkh•G•
264 48 48 8A 1E OD 7C 32 FF F7 E3 03 06 49 7C 13/16 4B 7C BB 00 Ø7 B9
                                                                       HH · |2|wc··I|··K|;··9
286 03 00 50 52 51 K8 3A 00 72 D8 B0 01 K8 54 00/59 5A 58 72 BB 05 01
                                                                       · · PROh: · rXO·hT·YZXr; · ·
30800 83 D2 00 03 1k 0B 7C k2 k2 8A 2k 15 7C 8A 16 24 7C 8B/1k 49 7C
                                                                        ··R····|bb .·| ·$|··I|
330A1 4B 7C KA 00 00 70 00 AC 0A CO 74 29 B4 ØK BB 07 00 ÆD 10 KB F2
                                                                       |!K|j・・p・, @t)4・;・・M・kr
3523B 16 18 7C 73 19 F7 36 18 7C FK C2 88 16/4F 7C 33 D2 F7 36 1A 7C
                                                                       ; · · | s · w 6 · | ~B · · 0 | 3Rw 6 · |
37488 16 25 7C A3 4D 7C F8 C3 F9 C3 B4 O2 8B 16 4D 7C B1 O6 D2 E6 OA
                                                                       ••%|#M|xCvC4•••M|1•Rf
39636 4F 7C 8B CA 86 E9 8A 16 24 7C 8A 36 25 7C CD 13 C3 OD OA 4E 6F
                                                                       60| · J · i · $| 6%| M · C No
4186K 2D 53 79 73 74 65 6D 20 64 69 73 6B 20 6F 72 20 64 69 73 6B 20
                                                                       n-System disk or disk
44065 72 72 6F 72 0D 0A 52 65 70 6C 61 63/65 20/61 6E 64 20 70 72 65
                                                                       error Replace and pre
46273 73 20 61 6E 79 20 6B 65 79 20 77 68 65 6E 20 72 65 61 64 79 0D
                                                                       ss any key when ready
484 OA 00 49 4F 20 20 20 20 20 20 53 59 5/3 4/0 53 44 4F 53 20 20 20 53
                                                                         · IO
                                                                                  SYSMSDOS
50659 53 00 00 55 🞎
                                                                       YS··U™
```

Bytes 17 - 18

Maximum number of files in the root directory for FAT12 and FAT16.

This is 0 for FAT32 and typically 512 for FAT16.

E0 00= little endian (00 E0) = 224

```
000 EB 3C 90 4D 53 44 4F 53 35 2E 30 00 02 01 01 00 02 E0 00 40 0B F0
02209 00 12 00 02 00 00 00 00 00 00 00 00 00 00 29 DD 16 15/124 4E
0444F 20 4E 41 4D 45 20 20 20 20 46 41 54 31 32 20 20 20 FA 33 CO 8E
066D0 BC 00 7C 16 07 BB 78 00 36 C5 37 1K 56 16 53 BF 3K 7C B9 0B 00
                                                                       |P<・|・・;x・6E7・V/S・>|9・・
088 FC F3 A4 06 1F C6 45 FE OF 8B OE 18 7C 88 4D F9 89 47 02/C7 07 3E
1107C FB CD 13 72 79 33 CO 39 06 13 7C 74 08 8B 0E 13 7C 89 0E 20 7C
132A0 10 7C F7 26 16 7C 03 06 1C 7C 13 16 1E 7C 03 06 0E /7C 83 D2 00
154A3 50 7C 89 16 52 7C A3 49 7C 89 16 4B 7C B8 20 00 F7/26 11 7C 8B
1761E OB 7C O3 C3 48 F7 F3 O1 O6 49 7C 83 16 4B 7C OO BB OO O5 8B 16
19852 7C A1 50 7C K8 92 00 72 1D B0 01 K8 AC 00 72 16 8B FB B9 0B 00
                                                                       R/!P|h··r·0·h,·r··{9··
220BE E6 7D F3 A6 75 OA 8D 7F 20 B9 OB OO F3 A6 74 18/ BE 9E 7D E8 5F
                                                                       >f}s&u | 0 9 • • s&t • > • }h |
24200 33 CO CD 16 5E 1F 8F 04 8F 44 02 CD 19 58 58 58 EB E8 8B 47 1A
                                                                       •3@M•^•••D•M•XXXkh•G•
264 48 48 8A 1E OD 7C 32 FF F7 E3 03 06 49 7C 13 16 4B 7C BB 00 07 B9
                                                                       286 03 00 50 52 51 K8 3A 00 72 D8 B0 01 K8 54 00 59 5A 58 72 BB 05 01
                                                                       ...PRQh: .rX0.hT.YZXr;..
30800 83 D2 00 03 1k 0B 7C k2 k2 8A 2k 15 7C 8A 1/6 24 7C 8B 1/k 49 7C
                                                                       ..R...|bb ..| .$|..I|
330A1 4B 7C KA 00 00 70 00 AC 0A CO 74 29 B4 0K BB 07 00 CD 10 KB F2
                                                                       !K|j••p•, @t)4•;••M•kr
3523B 16 18 7C 73 19 F7 36 18 7C FE C2 88 16 4F/7C 33 D2/F7 36 1A 7C
                                                                       ; • • | s • w 6 • | ~ B • • 0 | 3 R w 6 • |
37488 16 25 7C A3 4D 7C F8 C3 F9 C3 B4 O2 8B 1/6 4D 7C /B1 O6 D2 K6 OA
                                                                       | • • % | #M | xCyC4•••M|1•Rf
39636 4F 7C 8B CA 86 E9 8A 16 24 7C 8A 36 25/7C CD 1/3 C3 OD OA 4E 6F
                                                                       60|·J·i ·$| 6%|M·C No
4186K 2D 53 79 73 74 65 6D 20 64 69 73 6B 20 6F 72 20 64 69 73 6B 20
                                                                       n-System disk or disk
44065 72 72 6F 72 0D 0A 52 65 70 6C 61 63 65 20/61 6E 64 20 70 72 65
                                                                       error Replace and pre
46273 73 20 61 68 79 20 6B 65 79 20 77 68 65 68 20 72 65 61 64 79 0D
                                                                       ss any key when ready
484 OA 00 49 4F 20 20 20 20 20 20 53 59 53 40 53 44 4F 53 20 20 20 53
                                                                        · IO
                                                                                 SYSMSDOS
506 59 53 00 00 55 🔼
                                                                       YS··U™
```

Bytes 19 - 20 number of sectors in file system 40 OB= Little endian (OB 40) =2880

```
000 EB 3C 90 4D 53 44 4F 53 35 2E 30 00 02 01 01 00 02 E0 00 40 0B
02209 00 12 00 02 00 00 00 00 00 00 00 00 00 00 29 DD 16 15 24 48
0444F 20 4E 41 4D 45 20 20 20 20 46
                                    41 54 31 32 20 20 20 FA 33 CO /8E
                                    37 1E 56 16 53 BF 3E 7C B9 0E 00
066D0 BC 00 7C 16 07 BB 78 00 36 C5
088FC F3 A4 06 1F C6 45 FE OF 8B OE 18 7C 88 4D F9 89 47 02 C7 Ø7 3E
1107C FB CD 13 72 79 33 CO 39 O6 13 7C 74 O8 8B OK 13 7C 89 OK 20 7C
132A0 10 7C F7 26 16 7C 03 06 1C 7C 13 16 1E 7C 03 06 0E 7C 83 D2 00
154A3 50 7C 89 16 52 7C A3 49 7C 89 16 4B 7C B8 20 00 F7 26/11 7C 8B
1761E OB 7C O3 C3 48 F7 F3 O1 O6
                                 49 7C 83 16 4B 7C 00 BB 0Ø 05 8B 16
19852 7C A1 50 7C K8 92 00 72 1D B0 01 K8 AC 00 72 16 8B #B B9 0B 00
                                                74 18 BE 9E 7D E8 5F
220BK K6 7D F3 A6 75 OA 8D 7F 20 B9 OB OO F3 A6
24200 33 CO CD 16 5E 1F 8F 04 8F 44 02 CD 19 58 58 58 EB E8 8B 47 1A
                                                                      •3@M•^•••D•M•XXXkh•G•
264 48 48 8A 1E OD 7C 32 FF F7 E3 03 06 49 7C 13 16 4B/7C BB 00 07/B9
                                                                      286 03 00 50 52 51 K8 3A 00 72 D8 B0 01 K8 54 00 59 5A 58 72 BB 105 01
                                                                      • PROh: •rX0•hT•YZXr; ••
30800 83 D2 00 03 1K 0B 7C K2 K2 8A 2K 15 7C 8A 16 24 7C 8B 16 49 7C
                                                                      ••R••••|bb .•| •$|••I|
330A1 4B 7C KA 00 00 70 00 AC 0A CO 74 29 B4 0K BB 07 00 CD 10 KB F2
                                                                      !K|j••p•, @t)4•;••M•kr
3523B 16 18 7C 73 19 F7 36 18 7C FK C2 88 16 4F 7C 33 D2/F7 36 1A 7C
                                                                      ; · · | s · w 6 · | ~B · · 0 | 3 R w 6 · |
37488 16 25 7C A3 4D 7C F8 C3 F9 C3 B4 O2 8B 16/4D 7C 181 O6 D2 R6 OA
                                                                      ••* | #M| xCyC4••• M| 1•Rf
39636 4F 7C 8B CA 86 K9 8A 16 24 7C 8A 36 25 7C CD 1/3 C3 OD OA 4E 6F
                                                                      60|·J·i ·$| 6%|M·C No
                                                                      n-System disk or disk
4186K 2D 53 79 73 74 65 6D 20 64 69 73 6B 20 6F 72 20 64 69 73 6B 20
44065 72 72 6F 72 0D 0A 52 65 70 6C 61 63 65 20/61 6E 64 20 70 72 65
                                                                            Replace and pre
46273 73 20 61 6E 79 20 6B 65 79 20 77 68 65 6E 20 72 65 61 64 79 0D
                                                                      ss any key when ready
4840A 00 49 4F 20 20 20 20 20 53 59 53/42 53 44

    TO

                                                                                SYSMSDOS
50659 53 00 00 55 🛺
                                                                      YS··U™
```

Byte 21

Media type. According to the Microsoft documentation, 0xf8 should be used for fixed disks and 0xf0 for removable.

```
000 RB 3C 90 4D 53 44 4F 53 35 2K 30 00 02 01 01 00 02 K0 00 40 0B F0 k · MSDOS5.0·
022 09 00 12 00 02 00 00 00 00 00 00 00 00 00 00 29 DD 16 15 24 4E
0444F 20 4E 41 4D 45 20 20 20 20 46 41 54 31 32 20 20 20 FA 33 CO 8E
066D0 BC 00 7C 16 07 BB 78 00 36 C5 37 1K 56 16 53 BF 3K 7C B9 0B 00
                                                                        |P<・|・・;x・6E7・V・S/>|9・・
088 FC F3 A4 06 1F C6 45 FE OF 8B OE 18 7C 88 4D F9 89 47 02 C7 07 3E
110 7C FB CD 13 72 79 33 CO 39 06 13 7C 74 08 8B 0E 13 7C 89 0E 20 7C
                                                                        |{M·rv3@9··/t····|
132A0 10 7C F7 26 16 7C 03 06 1C 7C 13 16 1E 7C 03 06 0E 7C 83 D2 00
154A3 50 7C 89 16 52 7C A3 49 7C 89 16 4B 7C B8 20 00 F7 26 11 7C 8B
                                                                        #P| •R|#I| •K|8 •w4•|•
176 1E OB 7C 03 C3 48 F7 F3 01 06 49 7C 83 16 4B 7C 00 BB 00 05 8B 16
                                                                        ..|.CMws..I|..K|.;....
19852 7C A1 50 7G E8 92 00 72 1D B0 01 E8 AC 00 72 16 8B FB B9 0B 00
                                                                        R| 1/10 | h · · r · 0 · h , · r · · {9 · ·
220BE E6 7D F3 A6 75 OA 8D 7F 20 B9 OB OO F3 A6 74 18 BE 9E 7D E8 5F
                                                                        >f}sau □ 9··sat·>·}h
24200 33 CO CD 16 SK 1F 8F 04 8F 44 02 CD 19 58 58 58 KB K8 8B 47 1A
                                                                        •3@M•^•••D•M•XXXkh•G•
26448 48 8A 1E OD 7C 32 FF F7 E3 O3 O6 49 7C 13 16 4B 7C BB OO O7 89
                                                                        HH · |2|wc··I|··K|;··9
286 03 00 50 52 51 K8 3A 00 72 D8 B0 01 K8 54 00 59 5A 58 72 BB Ø5 01
                                                                        · · PRQh: ·rXO·hT·YZXr; · ·
308 00 83 D2 00 03 1K 0B 7C K2 K2 8A 2K 15 7C 8A 16 24 7C 8B 1X 49 7C
                                                                        ••R••••|bb .•| •$|••I|
330A1 4B 7C KA 00 00 70 00 AC 0A CO 74 29 B4 0K BB 07 00 CD 10 KB F2
                                                                        |!K|j・・p・, @t)4・;・・M・kr
3523B 16 18 7C 73 19 F7 36\18 7C FE C2 88 16 4F 7C 33 D2 F7 36 1A 7C
                                                                        ; · · | s · w 6 · | ~B · · 0 | 3Rw 6 · |
37488 16 25 7C A3 4D 7C F8 C3 F9 C3 B4 O2 8B 16 4D 7C B1 O6 D2 K6 OA
                                                                        | • • % | #M| xCyC4•••M| 1•Rf
39636 4F 7C 8B CA 86 E9 8A 16\24 7C 8A 36 25 7C CD 13 C3 OD OA 4E 6F
                                                                        60| · J · i · $| 6%| M · C No
4186E 2D 53 79 73 74 65 6D 20 64 69 73 6B 20 6F 72/20 64 69 73 6B 20
                                                                        n-System disk or disk
44065 72 72 6F 72 0D 0A 52 65 70 6C 61 63 65 20 61 6B 64 20 70 72 65
                                                                        error Replace and pre
46273 73 20 61 68 79 20 6B 65 79 20 77 68 65 88 20 72 65 61 64 79 0D
                                                                        ss any key when ready
484 OA 00 49 4F 20 20 20 20 20 20 53 59 53 42 53 44 4F 53 20 20 20 53
                                                                         · IO
                                                                                   SYSMSDOS
50659 53 00 00 55 🞎
                                                                        YS··U™
```

Bytes 22–23

16-bit size in sectors of each FAT for FAT12 and FAT16. For FAT32, this field is 0.

 $09\ 00 = little\ endian\ (00\ 09) = 9$

```
000 EB 3C 90 4D 53 44 4F 53 35 2K 30 00 02 01 01 00 02 K0 00 40 0B F0
                                                                      k≼-MSDOS5.0·····``@·p
02209 00 12 00 02 00 00 00 00 00 00 00 00 00 00 29 DD 16 15 24 4E
0444F 20 4E 41 4D 45 20 20 20 20 46 41 54 31 32 20 20 20 FA 33 CO 8E
                                                                      O/NAME
066D0 BC 00 7C 16 07 BB 78 00 36 C5 37 1K 56 16 53 BF 3K 7C B9 0B 00
                                                                      /P<・|・・;x・6E7・V・S・>|9・・
088FC F3 A4 06\1F C6 45 FE OF 8B OE 18 7C 88 4D F9 89 47 02 C7 07 3E
                                                                       |s$..FE~...|.My G.G.>
1107C FB CD 13 72 79 33 CO 39 06 13 7C 74 08 8B OE 13 7C 89 OE 20 7/C
                                                                      132A0 10 7C F7 28 16 7C 03 06 1C 7C 13 16 1E 7C 03 06 0E 7C 83 D2/00
                                                                      | •|w&•|•••|•••|•R•
154A3 50 7C 89 16 52 7C A3 49 7C 89 16 4B 7C B8 20 00 F7 26 11 7C 8B | #P| ·R| #I| ·K| 8 ·w4·|·
1761E OB 7C O3 C3 48 F7 F3 O1 O6 49 7C 83 16 4B 7C OO BB OO O5/8B 16
                                                                      |••|•CHws••I|••K|•;••••
19852 7C A1 50 7C K8\92 00 72 1D B0 01 K8 AC 00 72 16 8B FB F9 0B 00
                                                                      |R|!P|h..r.O.h,.r..{9..
220BE E6 7D F3 A6 75 NA 8D 7F 20 B9 0B 00 F3 A6 74 18 BE 9E 7D E8 5F
                                                                      >f}s&u | 0 9 • · s&t • > • }h
24200 33 CO CD 16 5E 1R 8F 04 8F 44 02 CD 19 58 58 58 EB E8 8B 47 1A
                                                                      -3@M·^···D·M·XXXkh·G·
264 48 48 8A 1E OD 7C 32 FF F7 E3 03 06 49 7C 13 16 4B 7C/BB 00 07 B9 HH · |2|wc··I|··K|;··9
286 03 00 50 52 51 K8 3A 00 72 D8 B0 01 K8 54 00 59 5A 58 72 BB 05 01
                                                                       ...PRQh:.rX0.hT.YZXr;..
30800 83 D2 00 03 1E 0B 7C E2 E2 8A 2E 15 7C 8A 16 24/7C 8B 1E 49 7C
                                                                       ••R••••|bb .•| •$|••I|
330A1 4B 7C KA 00 00 70 00 AC 0A CO 74 29 B4 0K BB 07 00 CD 10 KB F2
                                                                      |!K|j・・p・, @t)4・;・・M・kr
3523B 16 18 7C 73 19 F7 36 18 7C FE C2 88 16 4F 7C/33 D2 F7 36 1A 7C
                                                                       ; · · | s · w 6 · | ~ B · · 0 | 3 R w 6 · |
37488 16 25 7C A3 4D 7C F8 C3 F9 C3 B4 O2 8B 16 4D 7C B1 O6 D2 R6 OA
                                                                      | • • % | #M | xCyC4•••M|1•Rf
39636 4F 7C 8B CA 86 E9 8A 16 24 7C 8A 36 25 7C/CD 13 C3 OD OA 4E 6F
                                                                      |60|•J•i •$| 6%|M•C No
4186E 2D 53 79 73 74 65 6D 20 64\69 73 6B 20 6F 72 20 64 69 73 6B 20
                                                                      n-System disk or disk
44065 72 72 6F 72 0D 0A 52 65 70 &C 61 63 65/20 61 6E 64 20 70 72 65
                                                                      error Replace and pre
46273 73 20 61 68 79 20 6B 65 79 20 77 68 65 68 20 72 65 61 64 79 0D
                                                                      ss any key when ready
484 OA 00 49 4F 20 20 20 20 20 20 53 59 53 4D 53 44 4F 53 20 20 20 53
                                                                        · IO
                                                                                 SYSMSDOS
506 59 53 00 00 55 🔼
                                                                      YS··U™
```

Bytes 24–25 Sectors per track of storage device. 12 00 = little endian (00 12) = 18

```
000 EB 3C 90 4D 53 44 4F 53 35 2E 30 00 02 01 01 00 02 E0 00 40 0B F0
02209 00 12 00 02 00 00 00 00 00 00 00 00 00 00 29 DD 16 15 24 4E
044 4F 20 4E 41 4D 45 20 20 20 20 46 41 54 31 32 20 20 20 FA 33 CO 8E
066D0 BC 00 7C 16 07 BB 78 00 36 C5 37 1K 56 16 53 BF 3K 7C B9 0B 00
                                                                       P★・|・・;x・6E7・V・S・>|9・・
088FC F3 A4 06 1F C6 45 FE OF 8B OE 18 7C 88 4D F9 89 47 02 C7 07 3E
                                                                        |s$··FE~····|·M▽ G·G·>
1107C FB CD 13 72 79 33 CO 39 06 13 7C 74 08 8B 0E 13 7C 89 0E 20 7C
                                                                       132A0 10 7C F7 26 16 7C 03 06 1C 7C 13 16 1K 7C 03 06 0K 7C 83 D2 Ø0
                                                                         . | wa. | ... | ... | ... | . R.
154A3 50 7C 89 16 52 7C A3 49 7C 89 16 4B 7C B8 20 00 F7 26 11 7C 8B |#P| ·R|#I| ·K|8 ·w4·|·
1761E OB 7C 03 C3 48 F7\F3 01 06 49 7C 83 16 4B 7C 00 BB 00 05 $B 16
                                                                        ··|·CHws··I|··K|·;···
19852 7C A1 50 7C K8 92 00 72 1D B0 01 K8 AC 00 72 16 8B FB B9 0B 00
                                                                       R|!P|h..r.O.h,.r..{9..
220BE E6 7D F3 A6 75 OA 8D 7F 20 B9 OB OO F3 A6 74 18 BE 9E 7D E8 5F
                                                                       >f}sau | 9 · · sat · > · }h |
24200 33 CO CD 16 5E 1F 8F\04 8F 44 02 CD 19 58 58 58 EB E% 8B 47 1A
                                                                        •3@M•^•••D•M•XXXkh•G•
264 48 48 8A 1E OD 7C 32 FF F7 E3 03 06 49 7C 13 16 4B 7C ÆB 00 07 B9
                                                                       HH · |2|wc··I|··K|;··9
286 03 00 50 52 51 K8 3A 00 72 D8 B0 01 K8 54 00 59 5A 58 72 BB 05 01
                                                                       · · PRQh: ·rXO·hT·YZXr; · ·
30800 83 D2 00 03 1K 0B 7C K2\ K2 8A 2K 15 7C 8A 16 24 /7C 8B 1K 49 7C
                                                                        ••R••••|bb .•| •$|••I|
330A1 4B 7C KA 00 00 70 00 AC QA CO 74 29 B4 0K BB 07 00 CD 10 KB F2
                                                                       |!K|j・・p・, @t)4・;・・M・kr
3523B 16 18 7C 73 19 F7 36 18 7C FE C2 88 16 4F 7C /33 D2 F7 36 1A 7C
                                                                       ; · · | s · w 6 · | ~B · · 0 | 3Rw 6 · |
37488 16 25 7C A3 4D 7C F8 C3 F9 C3 B4 O2 8B 16 4D 7C B1 O6 D2 R6 OA
                                                                       | • • % | #M| xCyC4 • • • M| 1 • Rf
39636 4F 7C 8B CA 86 E9 8A 16 24 7C 8A 36 25 7C CD 13 C3 OD OA 4E 6F
                                                                       60| · J · i · $| 6%| M · C No
4186K 2D 53 79 73 74 65 6D 20 64 89 73 6B 20 6F 72 20 64 69 73 6B 20
                                                                       n-System disk or disk
44065 72 72 6F 72 0D 0A 52 65 70 6C 61 63 65 20 61 6E 64 20 70 72 65
                                                                       error Replace and pre
46273 73 20 61 6E 79 20 6B 65 79 20\77 68 6E 6E 20 72 65 61 64 79 0D
                                                                       ss any key when ready
4840A 00 49 4F 20 20 20 20 20 20 53 $9 53 4D 53 44 4F 53 20 20 20 53
                                                                         · IO
                                                                                  SYSMSDOS
50659 53 00 00 55 🛺
                                                                       YS··U™
```

Bytes 26-27Number of heads in storage device. $02\ 00 = \text{little endian}\ (00\ 02) = 2$

```
000 EB 3C 90 4D 53 44 4F 53 35 2R 30 00 02 01 01 00 02 EO 00 40 0B FO
                                                                                                                                          k<.MSDOS5 0.........
022 09 00 12 00 02 00 00 00 00 00 00 00 00 00 00 29 DD 16 15 24 4E
0444F 20 4E 41 4D 45 20 20 20 20 46 41 54 31 32 20 20 20 FA 33 CO 8E
                                                                                                                                                               FAT12
066D0 BC 00 7C 16 07 BB 78 00 36 C5 37 1K 56 16 53 BF 3K 7C B9 0B 00
                                                                                                                                           P<-1/-,x-6E7.V-S->19..
088FC F3 A4 06 1F C6 45 FE OF 8B OE 18 7C 88 4D F9 89 47 02 C7 07 3E
                                                                                                                                           |s$\frac{1}{2} \cdot \cd
                                                                                                                                           |/M·rv3@9··|t····| · |
1107C FB CD 13 72 79 33 CO 39 06 13 7C 74 08 8B 0K 13 7C 89 0K 20 7C
132A0 10 7C F7 26 16 7C 03 00 1C 7C 13 16 1K 7C 03 06 0K 7C 83 D2 00
                                                                                                                                            . | w& . | . . . | . . . | . . . | . R .
                                                                                                                                          #P| •R|#I| •K|8 •w4•|•
154A3 50 7C 89 16 52 7C A3 49\7C 89 16 4B 7C B8 20 00 F7 26 11 7C 8F
1761E OB 7C 03 C3 48 F7 F3 01 06 49 7C 83 16 4B 7C 00 BB 00 05 8B/16
                                                                                                                                           |••|•CHws••I|••K|•;••••
19852 7C A1 50 7C E8 92 00 72 LD B0 01 E8 AC 00 72 16 8B FB B9 06 00
                                                                                                                                           R|!P|h..r.O.h,.r..{9..
220BK K6 7D F3 A6 75 0A 8D 7F 20 B9 0B 00 F3 A6 74 18 BK 9K 7D/K8 5F
                                                                                                                                          24200 33 CO CD 16 5E 1F 8F 04 8F 44 02 CD 19 58 58 58 EB E8 8B 47 1A
                                                                                                                                           •30M•^•••D•M•XXXkh•G•
26448 48 8A 1E OD 7C 32 FF F7 E3 03 06 49 7C 13 16 4B 7C BB 00 07 B9
                                                                                                                                          HH • |2|wc•·I|•·K|;••9
286 03 00 50 52 51 K8 3A 00 72 D8\B0 01 K8 54 00 59 5A 58 1/2 BB 05 01
                                                                                                                                           · · PROh: ·rXO·hT·YZXr; · ·
30800 83 D2 00 03 1E 0B 7C E2 E2 8A 2E 15 7C 8A 16 24 70 8B 1E 49 7C
                                                                                                                                           ··R····|bb .·| ·$|··I|
330A1 4B 7C KA 00 00 70 00 AC 0A CO 74 29 B4 0K BB 07 00 CD 10 KB F2
                                                                                                                                           |!K|j・・p・, @t)4・;・・M・kr
3523B 16 18 7C 73 19 F7 36 18 7C FE C2 88 16 4F 7C 33 D2 F7 36 1A 7C
                                                                                                                                           ;··|s·w6·|~B··0|3Rw6·|
37488 16 25 7C A3 4D 7C F8 C3 F9 C3 B4 O2 8B 16 4D/7C B1 O6 D2 R6 OA
                                                                                                                                           ··%|#M|xCyC4···M|1·Rf
39636 4F 7C 8B CA 86 E9 8A 16 24 7C\8A 36 25 7C CD 13 C3 OD OA 4E 6F
                                                                                                                                           60| · J · i · $| 6%| M · C No
4186K 2D 53 79 73 74 65 6D 20 64 69 73 6B 20 6K 72 20 64 69 73 6B 20
                                                                                                                                          n-System disk or disk
44065 72 72 6F 72 0D 0A 52 65 70 6C 61 63 65 20 61 6E 64 20 70 72 65
                                                                                                                                           error Replace and pre
46273 73 20 61 68 79 20 6B 65 79 20 √17 68 65 68 20 72 65 61 64 79 0D
                                                                                                                                           ss any key when ready
484 OA 00 49 4F 20 20 20 20 20 20 53 59 53 AD 53 44 4F 53 20 20 20 53
                                                                                                                                             · IO
                                                                                                                                                               SYSMSDOS
50659 53 00 00 55 🞎
                                                                                                                                           YS··U™
```

Bytes 28–31

Number of sectors before the start of partition.

```
000 EB 3C 90 4D 53 44 4F 53 35 2R 30 00 02 01 01 00 02 E0 00 40 0B F0
                                                                         022 09 00 12 00 02 00 00 00 00 00 00 00 00 00 00 29 DD 16 15 24 4K
0444F 20 4E 41 4D 45 20 20 20 20 46 41 54 31 32 20 20 20 FA 33 CO 8E
066D0 BC 00 7C 16 07 BB 78 00 36 C5 37 1K 56 16 53 BF 3K 7C B9 0B 00
                                                                         |P<-|--;x/6E7-V-S->|9--
088FC F3 A4 06 1F C6 45 FE OF 8B OE 18 7C 88 4D F9 89 47 02 C7 07 3E
                                                                          |s$..FK~...|.Mv G.G.>
1107C FB CD 13 72 79 33 CO 39 06 13 7C 74 08 8B 0E 13 7C 89 0E 20 7C
                                                                          |\{\mathbf{M}\cdot\mathbf{x}\mathbf{v}3\mathbf{0}9\cdots|\mathbf{t}\cdots\cdots|\cdot|\}|
132A0 10 7C F7 26 16 7C 03 06 1C 7C 13 16 1E 7C 03 06 0E 7C 83 D2 00
154A3 50 7C 89 16 52 7C A3 49 7C 89 L6 4B 7C B8 20 00 F7 26 11 7C 8B
                                                                         #/P| •R|#I| •K|8 •w4•|•
176 1E OB 7C O3 C3 48 F7 F3 O1 O6 49 7C 83 16 4B 7C OO BB OO O5 8B 16
                                                                          ··|·CHws··I|··K|·;···
19852 7C A1 50 7C E8 92 00 72 1D B0 01 E8 AC 00 72 16 8B FB B9 0B 00
                                                                         |R|!P|h..r.O.h,.r..{9..
220BE E6 7D F3 A6 75 OA 8D 7F 20 B9 0B 00 F3 A6 74 18 BE 9E 7D E8 5F
                                                                         |>f}sau | 0 9 · · sat · > · }h
24200 33 CO CD 16 5E 1F 8F 04 8F 44 02 CD 19 58 58 58 EB E8 8B 47 1A
                                                                         -3@M·^···D·M·XXXkh·G·
264 48 48 8A 1E OD 7C 32 FF F7 E3 03 06 49 7C 13 16 4B 7C BB 00 07 B9 HH · |2|we··I|··K|;··9
286 03 00 50 52 51 K8 3A 00 72 D8 B0 01 K8 54 00 59 5A 58 72 BB 05 01
                                                                         · · PRQh: ·rXO·hT·YZXr; · ·
30800 83 D2 00 03 1E 0B 7C E2 E2 8A 2E 15 7C 8A 16 24 7C 8B 1E 49 7C
                                                                         | • • R • • • • | bb | • • | • $ | • • I |
330A1 4B 7C KA 00 00 70 00 AC 0A CO 74 29 B4 0K BB 07 0Ø CD 10 KB F2
                                                                         !K|j··p·, @t)4·;··M·kr
3523B 16 18 7C 73 19 F7 36 18 7C FE C2 88 16 4F 7C 33/D2 F7 36 1A 7C
                                                                         ; · · | s · w 6 · | ~B · · 0 | 3Rw 6 · |
37488 16 25 7C A3 4D 7C F8 C3 F9 C3 B4 O2 8B 16 4D 7C B1 O6 D2 E6 OA
                                                                         ··*|#M|xCyC4···M|1·Rf
39636 4F 7C 8B CA 86 E9 8A 16 24 7C 8A 36 25 7C CD 13 C3 OD OA 4E 6F
                                                                         60| · J · i · $| 6%| M · C No
4186K 2D 53 79 73 74 65 6D 20 64 69 73 6B 20 6F /12 20 64 69 73 6B 20
                                                                         n-System disk or disk
44065 72 72 6F 72 0D 0A 52 65 70 6C 61 63 65 20 61 6E 64 20 70 72 65
                                                                         error Replace and pre
46273 73 20 61 6E 79 20 6B 65 79 20 77 68 65/6E 20 72 65 61 64 79 0D
                                                                         ss any key when ready
484 OA 00 49 4F 20 20 20 20 20 20 53 59 53 AD 53 44 4F 53 20 20 20 53
                                                                           · IO
                                                                                    SYSMSDOS
50659 53 00 00 55 🞎
                                                                         YS··U™
```

Bytes 32 - 35

32-bit value of number of sectors in file system. Either this value or the 16-bit value above must be 0.

```
000 EB 3C 90 4D 53 44 4F 53 35 2E 30 00 02 01 01 00 02 EO 00 40 0E FO
02209 00 12 00 02 00 00 00 00 00 00 00 00 00 00 29 DD 16 15 24 4E
0444F 20 4E 41 4D 45 20 20 20 20 46 41 54 31 32 20 20 20 FM 33 CO 8E
066D0 BC 00 7C 16 07 BB 78 00 36 C5 37 1K 56 16 53 BF 3K 7C B9 0B 00
                                                                      P<-1--:x-6E7-V-S->
088FC F3 A4 06 1F C6 45 FE OF 8B OE 18 7C 88 4D F9 89 47 02 C7 07 3E
1107C FB CD 13 72 79 33 CO 39 06 13 7C 74 08 8B 0E 13 7C/89 0E 20 7C
132A0 10 7C F7 26 16 7C 03 06 1C 7C 13 16 1E 7C 03 06 0E 7C 83 D2 00
154A3 50 7C 89 16 52 7C A3 49 7C 89 16 4B 7C B8 20 00 $7 26 11 7C 8B
1761E OB 7C O3 C3 48 F7 F3 O1 O6 49 7C 83 16 4B 7C O0/BB OO O5 8B 16
                                                                      R| 1/P|h..r.O.h,.r..{9..
19852 7C A1 50 7C K8 92 00 72 1D B0 01 K8 AC 00 72 16 8B FB B9 0B 00
220BK K6 7D F3 A6 75 OA 8D 7F 20 B9 OB OO F3 A6 74 1/8 BK 9K 7D K8 5F
                                                                      24200 33 CO CD 16 5E 1F 8F 04 8F 44 02 CD 19 58 58 58 E8 E8 8B 47 1k
                                                                       •3@M•^•••D•M•XXXkh•G•
264 48 48 8A 1E OD 7C 32 FF F7 E3 03 06 49 7C 13 16 4B 7C BB 00 07 B9
                                                                      HH · |2|wc··I|··K|;··9
286 03 00 50 52 51 K8 3A 00 72 D8 B0 01 K8 54 00 5/9 5A 58 72 BB Ø5 01
                                                                       ...PRQh:.rX0.hT.YZXr;...
30800 83 D2 00 03 1E 0B 7C E2 E2 8A 2E 15 7C 8A /16 24 7C 8B 1/E 49 7C
                                                                       **R****|bb .*| *$|**I|
330A1 4B 7C KA 00 00 70 00 AC 0A CO 74 29 B4 0E BB 07 00 CD 10 KB F2
                                                                       !K|j..p., @t)4.;..M.kr
3523B 16 18 7C 73 19 F7 36 18 7C FE C2 88 16 4/F 7C 33 D2/F7 36 1A 7C
                                                                      ; · · | s · w 6 · | ~B · · 0 | 3Rw 6 · |
37488 16 25 7C A3 4D 7C F8 C3 F9 C3 B4 O2 8B 16 4D 7C B1 O6 D2 R6 OA
                                                                      ··*|#M|xCyC4···M|1·Rf
39636 4F 7C 8B CA 86 E9 8A 16 24 7C 8A 36 25/7C CD 12 C3 OD OA 4E 6F
                                                                      60| · J · i · $| 6%| M · C No
4186K 2D 53 79 73 74 65 6D 20 64 69 73 6B 20 6F 72 20 64 69 73 6B 20
                                                                      n-System disk or disk
44065 72 72 6F 72 0D 0A 52 65 70 6C 61 63 65 20 61 6E 64 20 70 72 65
                                                                      error Replace and pre
46273 73 20 61 68 79 20 6B 65 79 20 77 68/65 68 20 72 65 61 64 79 0D
                                                                      ss any key when ready
484 OA 00 49 4F 20 20 20 20 20 20 53 59 52 4D 53 44 4F 53 20 20 20 53

    TO

                                                                                 SYSMSDOS
506 59 53 00 00 55 👭
                                                                      YS··U™
```

Bytes 39 - 42

Volume serial number, which some versions of Windows will calculate based on the creation date and time.

```
000 EB 3C 90 4D 53 44 4F 53 35 2E 30 00 02 01 01 00 02 E0 00 40 0B E0
022<mark>09 00 12 00 02 00 00 00 00 00,</mark> 00 00 00 00 00 29 DD 16 15 24 4E
0444F 20 4E 41 4D 45 20 20 20 20 46 41 54 31 32 20 20 20 FA 33 CO 8E
066D0 BC 00 7C 16 07 BB 78 00 36 C5 37 1K 56 16 53 BF 3K 7C B9 0B/00
                                                                       088 FC F3 A4 06 1F C6 45 FE OF 8B OE 18 7C 88 4D F9 89 47 02 C7 0/ 3E
1107C FB CD 13 72 79 33 CO 39 06 13 7C 74 08 8B 0E 13 7C 89 0E 20 7C
132A0 10 7C F7 26 16 7C 03 06 1C 7C 13 16 1E 7C 03 06 0E 7C 83 D2 00
154A3 50 7C 89 16 52 7C A3 49 7C 89 16 4B 7C B8 20 00 F7 26 11 7C 8B
                                                                       #P| •R|#I/ •K|8 •w4•|•
1761E OB 7C 03 C3 48 F7 F3 01 06 49 7C 83 16 4B 7C 00 BB 00/05 8B 16
                                                                       R|!P/h..r.O.h,.r..{9..
19852 7C A1 50 7C K8 92 00 72 1D B0 01 K8 AC 00 72 16 8B KB B9 0B 00
                                                74 18 BE/9E 7D E8 5F
220BK K6 7D F3 A6 75 OA 8D 7F 20 B9 OB OO F3 A6
                                                                       >f/}s&u □ 9··s&t·>·}h
24200 33 CO CD 16 5E 1F 8F 04 8F 44 02 CD 19 58 58 58 EE E8 8B 47 1A
                                                                        •30M•^•••D•M•XXXkh•G•
264 48 48 8A 1E OD 7C 32 FF F7 E3 O3 O6 49 7C 13 16 4B /7C BB OO O7 B9
                                                                       HH · |2|wc··I|··K|;··9
286 03 00 50 52 51 K8 3A 00 72 D8 B0 01 K8 54 00 59 5A 58 72 BB 08 01
                                                                       · · PRQh: ·rXO·hT·YZXr; · ·
30800 83 D2 00 03 1k 0B 7C k2 k2 8A 2k 15 7C 8A 16 24 7C 8B 1k 49 7C
                                                                       ··R····|bb . · | · $ | · · I |
330A1 4B 7C KA 00 00 70 00 AC 0A CO 74 29 B4 0K BB/07 00 CD/10 KB F2
                                                                       !K|j..p., @t)4.;..M.kr
3523B 16 18 7C 73 19 F7 36 18 7C FE C2 88 16 4F 7C 33 D2 F7 36 1A 7C
                                                                       ; · · | s · w 6 · | ~B · · 0 | 3Rw 6 · |
37488 16 25 7C A3 4D 7C F8 C3 F9 C3 B4 O2 8B 16 4D 7C B1 06 D2 R6 OA
                                                                       ··*|#M|xCyC4···M|1·Rf
39636 4F 7C 8B CA 86 E9 8A 16 24 7C 8A 36 25 70 CD 13 C3 0D 0A 4E 6F
                                                                       60| · J · i · $| 6%| M · C No
4186K 2D 53 79 73 74 65 6D 20 64 69 73 6B 20 6F 72/20 64 69 73 6B 20
                                                                       n-System disk or disk
44065 72 72 6F 72 0D 0A 52 65 70 6C 61 63 65 20 61 6E 64 20 70 72 65
                                                                             Replace and pre
46273 73 20 61 6K 79 20 6B 65 79 20 77 68 $5 $K 20 72 65 61 64 79 0D
                                                                       ss any key when ready
484 OA 00 49 4F 20 20 20 20 20 20 53 59 53/4D 53 44 4F 53 20 20 20 53
                                                                        · IO
                                                                                  SYSMSDOS
506 59 53 00 00 55 👭
                                                                       YS··U™
```

Bytes 43 - 53

Volume label in ASCII. The user chooses this value when creating the file system.

NO NAME

```
OOOKB 3C 90 4D 53 44 4F 53 35 2K 30 00 02 01 01 00 02 K0 00 40 0B F0
                                                                      k<.MSDOS5.0....
044 4F 20 4E 41 4D 45 20 20 20 20 46 41 54 31 32 20 20 20 FA 33 CO 8E
066D0 BC 00 7C 16 07 BB 78 00 36 C5 37 1k√56 16 53 BF 3k 7C B9 0B 00
                                                                      P<-|--:x-6E7/V-S->|9--
088FC F3 A4 06 1F C6 45 FE OF 8B OE 18 7C 88 4D F9 89 47 02 C7 07 3E
1107C FB CD 13 72 79 33 CO 39 06 13 7C 74 08 8B 0K 13 7C 89 0K 20 7C
132A0 10 7C F7 26 16 7C 03 06 1C 7C 13 16 1K 7C 03 06 0K 7C 83 D2 00
154A3 50 7C 89 16 52 7C A3 49 7C 89 16 4B 7C B8 20 00 F7 26 11 7C 8B
1761E OB 7C 03 C3 48 F7 F3 01 06 49 7C 83 16 4B 7C 00 BB 00 05 8B 16
19852 7C A1 50 7C K8 92 00 72 1D B0 01 K8 AC 00 72 16 8B FB B9 0B 00
                                                                      |A| | P | h · · r · O · h , · r · · {9 · ·
220BK K6 7D F3 A6 75 OA 8D 7F 20 B9 OB OW F3 A6 74 18 BK 9K 7D K8 5F
                                                                      >f}s&u | 0 9 • · s&t · > · }h
24200 33 CO CD 16 5E 1F 8F 04 8F 44 02 CD 19 58 58 58 EB E8 8B 47/1A
                                                                       •3@M•^•••D•M•XXXkh•G•
264 48 48 8A 1E OD 7C 32 FF F7 E3 03 06 49 7C 13 16 4B 7C BB 00 Ø7 B9
                                                                      HH · |2|wc··I|··K|;··9
286 03 00 50 52 51 K8 3A 00 72 D8 B0 01 K8 54 00 59 5A 58 72 BB 05 01
                                                                      · · PRQh: ·rXO·hT·YZXr; · ·
30800 83 D2 00 03 1K 0B 7C K2 K2 8A 2K 15 7C 8A 16 24 7C 8B/1K 49 7C
                                                                       ··R····|bb . · | · $ | · · I |
330A1 4B 7C KA 00 00 70 00 AC 0A CO 74 29 B4 0K BB 07 00 &D 10 KB F2
                                                                      |!K|j・・p・, @t)4・;・・M・kr
3523B 16 18 7C 73 19 F7 36 18 7C FK C2 $8 16 4F 7C 33 D2 F7 36 1A 7C
                                                                      ; · · | s · w 6 · | ~B · · 0 | 3Rw 6 · |
37488 16 25 7C A3 4D 7C F8 C3 F9 C3 B4 02 8B 16 4D 7C B1 06 D2 K6 0A
                                                                      | • • % | #M| xCyC4 • • • M| 1 • Rf
39636 4F 7C 8B CA 86 E9 8A 16 24 7C 8A $6 25 7C CD 13 C3 OD OA 4E 6F
                                                                      60| · J · i · $| 6%| M · C No
4186K 2D 53 79 73 74 65 6D 20 64 69 73 6B 20 6F 72 20 64 69 73 6B 20
                                                                      n-System disk or disk
44065 72 72 6F 72 0D 0A 52 65 70 6C 61 63 65 20 61 6E 64 20 70 72 65
                                                                      error Replace and pre
46273 73 20 61 6E 79 20 6B 65 79 20 77 68 65 6E 20 72 65 61 64 79 0D
                                                                      ss any key when ready
484 OA 00 49 4F 20 20 20 20 20 20 53 59 53 40 53 44 4F 53 20 20 20 53
                                                                        · IO
                                                                                 SYSMSDOS
506 59 53 00 00 55 👭
                                                                      ∀Տ∙∙Մ≊
```

Bytes 54 - 61

File system type label in ASCII. Standard values include "FAT," "FAT12," and "FAT16," but nothing is required.

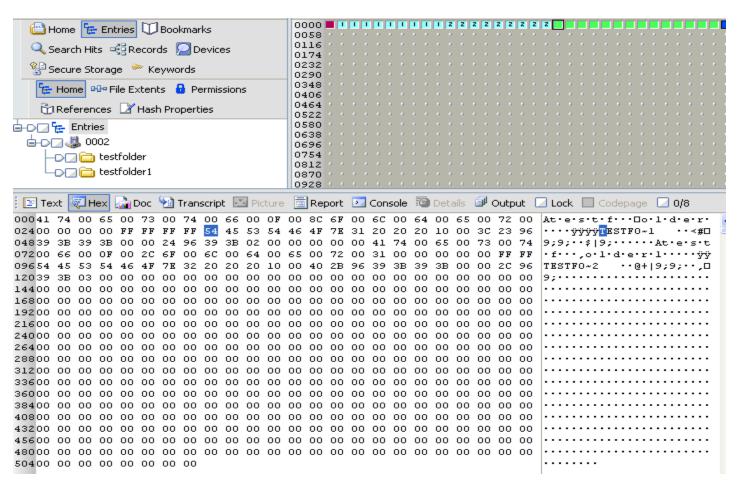
FAT12

```
000 EB 3C 90 4D 53 44 4F 53 35 2E 30 00 02 01 01 00 02 E0 00 40 0B F0
02209 00 12 00 02 00 00 00 00 00 00 00 00 00 00 29 DD 16
044 4F 20 4E 41 4D 45 20 20 20 20 46 41 54 31 32 20 20 20 FA 33 C0 8E
                                                                                        z30.
066D0 BC 00 7C 16 07 BB 78 00 36 C5 37 1K 56 16 53 BF 3K 7C 19 0B 0d
                                                                      P<・1・・; x・6E7・V・S・>19・・
088 FC F3 A4 06 1F C6 45 FE OF 8B OE 18 7C 88 4D F9 89 47 02/C7 07 3E
                                                                     ||s$ · · FE~ · · · · | · Mv G · G · >
1107C FB CD 13 72 79 33 CO 39 06 13 7C 74 08 8B OK 13 7C 89 OK 20 70 1 (M·ry3@9··|t···|
154A3 50 7C 89 16 52 7C A3 49 7C 89 16 4B 7C B8 20 00 F7/26 11 7C 8B
                                                                     #P| •R|#I| •K|8 •w4•|•
176 1E OB 7C O3 C3 48 F7 F3 O1 O6 49 7C 83 16 4B 7C OO BÉ OO O5 8B 16
                                                                      ••|•CHws••I|••K|•
19852 7C A1 50 7C K8 92 00 72 1D B0 01 K8 AC 00 72 16 8B FB B9 0B 00
                                                                      R|!P|h..r.O.h,.r..{9..
220BE E6 7D F3 A6 75 OA 8D 7F 20 B9 OB OO F3 A6 74 18/BE 9E 7D E8 5F
                                                                      >f}sau □ 9··sat•>·}h
24200 33 CO CD 16 5E 1F 8F 04 8F 44 02 CD 19 58 58 58 EB E8 8B 47 1A
                                                                      -3@M·^····D·M·XXKkh·G·
26448 48 8A 1E OD 7C 32 FF F7 E3 03 06 49 7C 13 16 4B 7C BB 00 07 BS
                                                                      HH • |2|wc••I|••K|;••9
286<mark>03 00 50 52 51 k8 3A 00 72 D8 B0 01 k8 54 00 59 5A 58 72 BB 05 01</mark>
                                                                      ••PROh:•rXO•hT•YZXr;••
30800 83 D2 00 03 1E 0B 7C E2 E2 8A 2E 15 7C 8A 1/6 24 7C 8B 1E 49 7C
330A1 4B 7C KA 00 00 70 00 AC 0A CO 74 29 B4 0K/BB 07 00 CD 10 KB F2
                                                                      !K|j••p•, @t)4•;••M•kr
3523B 16 18 7C 73 19 F7 36 18 7C FE C2 88 16 4F/7C 33 D2 F7 36 1A 70
                                                                     | : · · | s · w 6 · | ~B · · 0 | BRw 6 · |
37488 16 25 7C A3 4D 7C F8 C3 F9 C3 B4 O2 8B 1/6 4D 7C B1 O6 D2 K6 OA
                                                                     * · % | #M | xCyC4 · · · M | 1 · Rf
39636 4F 7C 8B CA 86 E9 8A 16 24 7C 8A 36 25/7C CD 13 C3 OD OA 4E 6F
                                                                      50| J·i ·$| 6%|M•C No
4186E 2D 53 79 73 74 65 6D 20 64 69 73 6B 20 6F 72 20 64 69 73 6B 20
                                                                      h-System disk or disk
440<mark>65 72 72 6F 72 0D 0A 52 65 70 6C 61 63 65 20 61 6E 64 20 70 72 6S</mark>
                                                                           Replace and pre
                                                                      error
46273 73 20 61 68 79 20 6B 65 79 20 77 68/65 68 20 72 65 61 64 79 0D
                                                                      ss any key when ready
484<mark>0A 00 49 4F 20 20 20 20 20 20 53 59 53 4D 53 44 4F 53 20 20 20 53</mark>
                                                                                SYSMSDDS
                                                                      •I0
506 59 53 00 00 55 🛺
```

Bytes 62 - 509 Not used

```
000 EB 3C 90 4D 53 44 4F 53 35 2E 30 00 02 01 01 00 02 E0 00 40 0B F0
                                                                       k<.MSD0S5.0...........
02209 00 12 00 02 00 00 00 00 00 00 00 00 00 00 29 DD 16 15 24 4E
044 4F 2O 4E 41 4D 45 2O 2O 2O 2O 46 41 54 31 32 2O 2O 2O FA 33 CO 8E
                                                                       O NAME
                                                                                          z30•
                                                                                  FAT12
066D0 BC 00 7C 16 07 BB 78 00 36 C5 37 1K 56 16 53 BF 3K 7C B9 0B 00
                                                                       P<.|..;x.6E7.V.S.>|9..
OBBFC F3 A4 O6 1F C6 45 FE OF 8B OE 18 7C 88 4D F9 89 47 O2 C7 O7 3E
                                                                        |s$..FE~...|.My G.G.>
                                                                       1107C FB CD 13 72 79 33 CO 39 O6 13 7C 74 O8 8B OK 13 7C 89 OK 20 7C
132A0 10 7C F7 26 16 7C 03 06 1C 7C 13 16 1E 7C 03 06 0E 7C 83 D2 00
                                                                        . | wa. | . . . | . . . | . . . | . R .
154A3 50 7C 89 16 52 7C A3 49 7C 89 16 4B 7C B8 20 00 F7 26 11 7C 8B
                                                                       #P| •R|#I| •K|8 •w4•|•
1761K OB 7C 03 C3 48 F7 F3 01 06 49 7C 83 16 4B 7C 00 BB 00 05 8B 16
                                                                        ··|·CHws··I|··K|·;···
                                                                       R|!P|h..r.O.h,.r..{9..
19852 7C A1 50 7C K8 92 00 72 1D B0 01 K8 AC 00 72 16 8B FB B9 0B 00
220BK K6 7D F3 A6 75 OA 8D 7F 20 B9 OB OO F3 A6 74 18 BK 9K 7D K8 5F
                                                                       >f}sau | 9 · · sat · > · }h
24200 33 CO CD 16 5E 1F 8F 04 8F 44 02 CD 19 58 58 58 EB E8 8B 47 1A
                                                                        •30M•^•••D•M•XXXkh•G•
26448 48 8A 1E OD 7C 32 FF F7 E3 03 06 49 7C 13 16 4B 7C BB 00 07 B9
                                                                       HH · |2|wc··I|··K|;··9
                                                                        · · PROh: ·rX0·hT·YZXr; · ·
28603 00 50 52 51 K8 3A 00 72 D8 B0 01 K8 54 00 59 5A 58 72 BB 05 01
                                                                        ··R····|bb . · | · $ | · · I |
30800 83 D2 00 03 1E 0B 7C E2 E2 8A 2E 15 7C 8A 16 24 7C 8B 1E 49 7C
330A1 4B 7C KA 00 00 70 00 AC 0A CO 74 29 B4 0K BB 07 00 CD 10 KB F2
                                                                       |!K|j・・p・, @t)4・;・・M・kr
                                                                       ; · · | s · w 6 · | ~B · · 0 | 3 R w 6 · |
3523B 16 18 7C 73 19 F7 36 18 7C FE C2 88 16 4F 7C 33 D2 F7 36 1A 7C
37488 16 25 7C A3 4D 7C F8 C3 F9 C3 B4 O2 8B 16 4D 7C B1 O6 D2 K6 OA
                                                                        ••* | #M| xCyC4••• M| 1•Rf
                                                                       60| · J · i · $| 6%| M · C No
39636 4F 7C 8B CA 86 K9 8A 16 24 7C 8A 36 25 7C CD 13 C3 OD OA 4E 6F
                                                                       n-System disk or disk
4186K 2D 53 79 73 74 65 6D 20 64 69 73 6B 20 6F 72 20 64 69 73 6B 20
                                                                       error Replace and pre
44065 72 72 6F 72 0D 0A 52 65 70 6C 61 63 65 20 61 6E 64 20 70 72 65
46273 73 20 61 6K 79 20 6B 65 79 20 77 68 65 6K 20 72 65 61 64 79 0D
                                                                       ss any key when ready
4840A 00 49 4F 20 20 20 20 20 20 53 59 53 4D 53 44 4F 53 20 20 20 53
                                                                         · IO
                                                                                  SYSMSDOS
50659 53 00 00 55 🎎
```

Bytes 510 - 511 Signature value (0xAA55).

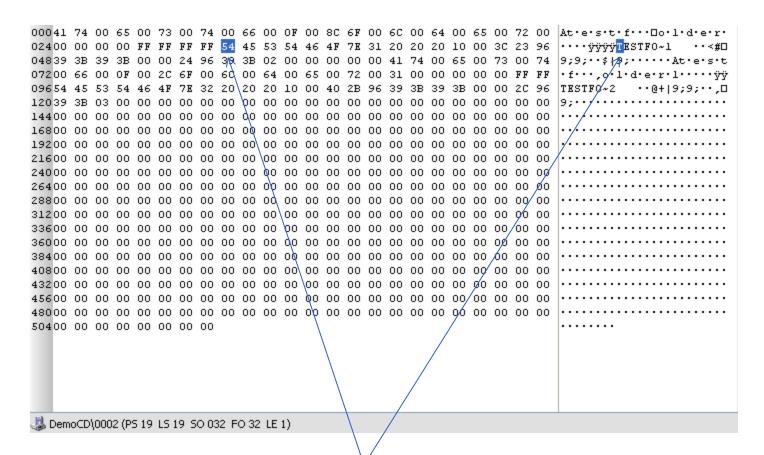


- Each file will have at least one directory entry called (basic directory entry).
 - File name in ASCII.
 - MAC Times/Dates.
 - File Size.
- If the file is longer than 8 characters in name or in different language than English it will have another one or more entries called long file name entry written in UNICODE.

Directory Entry Structure (Basic Entry)

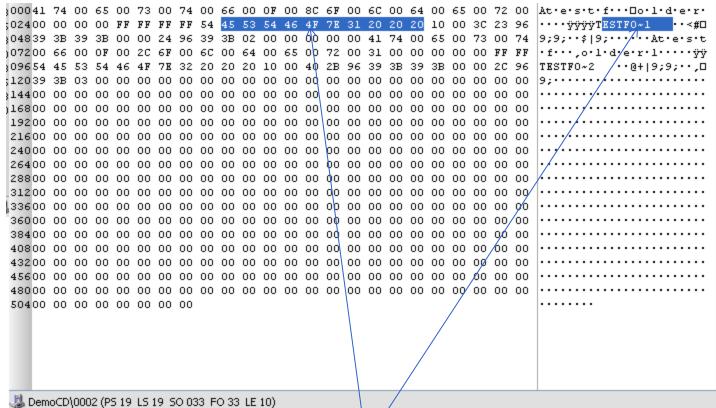
Table 10.5. Data structure for a basic FAT directory entry.

Byte Range	Description	Essential
0-0	First character of file name in ASCII and allocation status (0xe5 or 0x00 if unallocated)	Yes
1-10	Characters 2 to 11 of file name in ASCII	Yes
11-11	File Attributes (see Table 10.6)	Yes
12-12	Reserved	No
13-13	Created time (tenths of second)	No
14-15	Created time (hours, minutes, seconds)	No
16–17	Created day	No
18–19	Accessed day	No
20–21	High 2 bytes of first cluster address (0 for FAT12 and FAT16)	Yes
22-23	Written time (hours, minutes, seconds)	No
24–25	Written day	No
26–27	Low 2 bytes of first cluster address	Yes
28-31	Size of file (0 for directories)	Yes



Byte 0

First character of file name in ASCII or (0xe5 or 0x00 if unallocated)

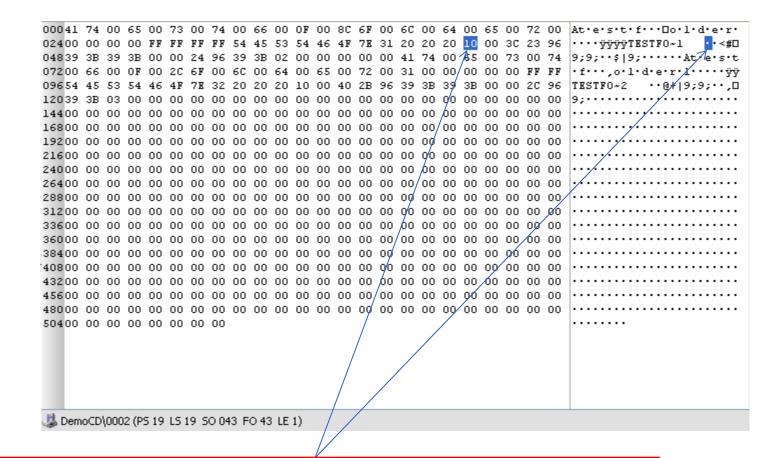


Bytes 1-10
Characters 2 to 11 of file name in ASCII or short name

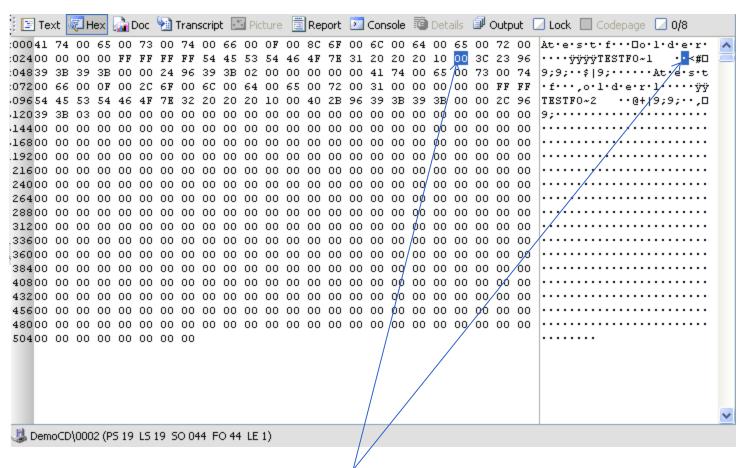
Directory Entry Structure – Entry Attribute

Table 10.6. Flag values for the directory entry attributes field.

Flag Value (in bits)	Description	Essential
0000 0001 (0x01)	Read only	No
0000 0010 (0x02)	Hidden file	No
0000 0100 (0x04)	System file	No
0000 1000 (0x08)	Volume label	Yes
0000 1111 (0x0f)	Long file name	Yes
0001 0000 (0x10)	Directory	Yes
0010 0000 (0x20)	Archive	No



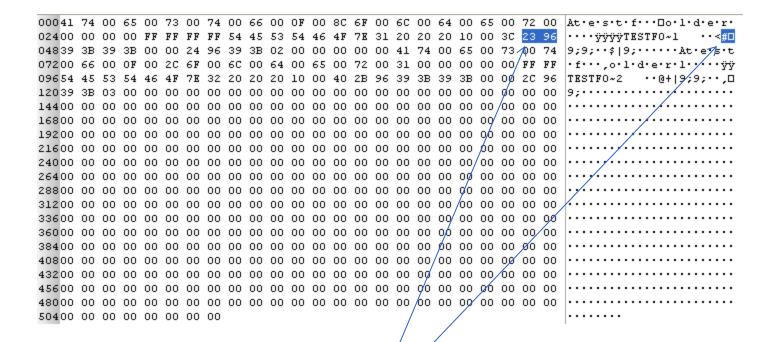
Byte 11 File Attributes



Byte 12 Reserved

```
00041 74 00 65 00 73 00 74 00 66 00 OF 00 8C 6F 00 6C 00 64 00 65 00 72 00
02400 00 00 00 FF FF FF FF 54 45 53 54 46 4F 7E 31 20 20 20 10 00
04839 3B 39 3B 00 00 24 96 39 3B 02 00 00 00 00 41 74 00 65 00 73 00 74
07200 66 00 0F 00 2C 6F 00 6C 00 64 00 65 00 72 00 31 00 00 00 00 00 FF FF
09654 45 53 54 46 4F 7E 32 20 20 20 10 00 40 2B 96 39 3B 39 3B 00/00 2C 96
50400 00 00 00 00 00 00 00
```

Byte 13
Created time (tenths of seconds)



Bytes 14-15
Created time (hours, minutes, seconds)

```
00041 74 00 65 00 73 00 74 00 66 00 0F 00 8C 6F 00 6C 00 64 00 65 00 72 00 Atterstf...Do:l.d.e.r.
02400 00 00 00 FF FF FF FF 54 45 53 54 46 4F 7K 31 20 20 20 10 00 3C 23 96
04839 3B 39 3B 00 00 24 96 39 3B 02 00 00 00 00 41 74 00 65 00 73 00 74
07200 66 00 0F 00 2C 6F 00 6C 00 64 00 65 00 72 00 31 00 00 00 00 00 FF FF
09654 45 53 54 46 4F 7E 32 20 20 20 10 00 40 2B 96 39 3B 39 3B 00 00 2C 96,
50400 00 00 00 00 00 00 00
```

Bytes 16-17 Created day

```
00041 74 00 65 00 73 00 74 00 66 00 0F 00 8C 6F 00 6C 00 64 00 65 00 72 00 Atterstf...Do:1.d.e.r.
02400 00 00 00 FF FF FF FF 54 45 53 54 46 4F 7E 31 20 20 20 10 00 3C 23 96
04839 3B 39 3B 00 00 24 96 39 3B 02 00 00 00 00 41 74 00 65 00 73 00 74
07200 66 00 0 00 00 2C 6F 00 6C 00 64 00 65 00 72 00 31 00 00 00 00 00 FF FF
09654 45 53 54 46 4F 7E 32 20 20 20 10 00 40 2B 96 39 3B 39 3B 00 00 2C 96
50400 00 00 00 00 00 00 00
```

Bytes 18-19 Accessed day

```
00041 74 00 65 00 73 00 74 00 66 00 0F 00 8C 6F 00 6C 00 64 00 65 00 72 00
02400 00 00 00 FF FF FF FF 54 45 53 54 46 4F 7E 31 20 20 20 10 00 3C 23 96
04839 3B 39 3B 00 00 24 96 39 3B 02 00 00 00 00 41 74 00 65 00 73 00 74
07200 66 00 0F 00 &C 6F 00 6C 00 64 00 65 00 72 00 31 00 00 00 00 00 FF FF
09654 45 53 54 46 4k 7k 32 20 20 20 10 00 40 2B 96 39 3B 39 3B 00 00 2C 96
50400 00 00 00 00 00 00
```

Bytes 20-21

High two bytes of the first cluster address (0 FAT12 and FAT16)

```
00041 74 00 65 00 73 00 74 00 66 00 OF 00 8C 6F 00 6C 00 64 00 65 00 72 00
02400 00 00 00 FF FF FF FF 54 45 53 54 46 4F 7E 31 20 20 20 10 00 3C 23 96
04839 3B 39 3B 00 00 <mark>24 96</mark> 39 3B 02 00 00 00 00 41 74 00 65 00 73 00 74
07200 66 00 0F 00 2C 6F 00 6C 00 64 00 65 00 72 00 31 00
              00 00 00 00
09654 45 53 54 46 4F 7K 32 20 20 20 10 00 40 2B 96 39 3B 39 3B 00 00 2C 96
50400 00 00 00 00 00 00
```

Bytes 22-23
Written time (hours, minutes, seconds)

```
00041 74 00 65 00 73 00 74 00 66 00 OF 00 8C 6F 00 6C 00 64 00 65 00 72 00
02400 00 00 00 FF FF FF FF 54 45 53 54 46 4F 7E 31 20 20 20 10 00 3C 23 96
      39 3B 02 00 00 00 00 00 41 74 00 65 00 73 00 74
04839 3B 39 3B 00 00 24 96
07200 66 00 0F 00 2C 6F 00 6C 00 64 00 65 00 72 00 31 00 00 00
09654 45 53 54 46 4F 7E 32 20\20 20 10 00 40 2B 96 39 3B 39 3B
50400 00 00 00 00 00 00 00
```

Bytes 24-25 Written day

```
00041 74 00 65 00 73 00 74 00 66 00 OF 00 8C 6F 00 6C 00 64 00 65 00 72 00
02400 00 00 00 FF FF FF FF 54 45 53 54 46 4F 7E 31 20 20 20 10 00 3C 23 96
04839 3B 39 3B 00 00 24 96 39 3B 02 00 00 00 00 41 74 00 65 00 73 00 74
07200 66 00 0F 00 2C 6F 00 6C 00 64 00 65 00 72 00 31 00 00 00 00
09654 45 53 54 46 4F 7E 32 20 20 20 10 00 40 2B 96 39 3B 39 3B 00 00
50400 00 00 00 00 00 00
```

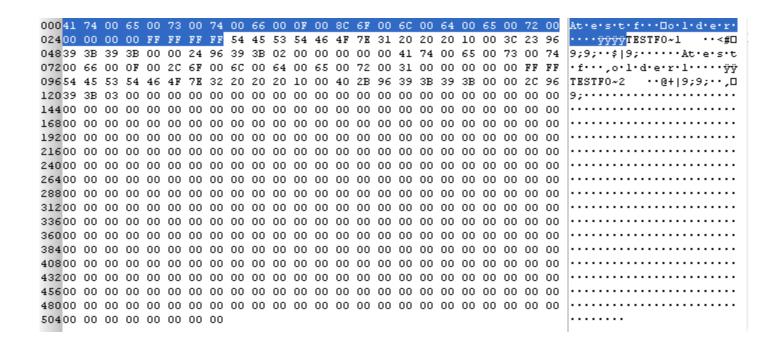
Bytes 26-27 Low 2 bytes of first cluster address

```
00041 74 00 65 00 73 00 74 00 66 00 OF 00 8C 6F 00 6C 00 64 00 65 00 72 00
02400 00 00 00 FF FF FF FF 54 45 53 54 46 4F 7E 31 20 20 20 10 00 3C 23 96
04839 3B 39 3B 00 00 24 96 39 3B 02 00 00 00 00 41 74 00 65 00 73 00 74
07200 66 00 0F 00 2C 6F 00 6C 00 64 00 65 00\72 00 31 00 00 00 00
09654 45 53 54 46 4F 7E 32 20 20 20 10 00 40 2B 96 39 3B 39 3B 00 00 2C 96
00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00
19200 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00
   50400 00 00 00 00 00 00 00
```

Bytes 28-31 Size of file (0 for directories)

Table 10.7. Data structure for an LFN FAT directory entry.

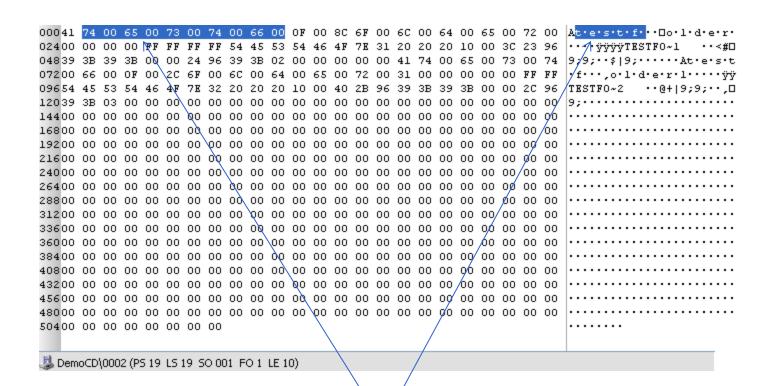
Byte Range	Description	Essential
0–0	Sequence number (ORed with 0x40) and allocation status (0xe5 if unallocated)	Yes
1-10	File name characters 1–5 (Unicode)	Yes
11-11	File attributes (0x0f)	Yes
12-12	Reserved	No
13-13	Checksum	Yes
14-25	File name characters 6–11 (Unicode)	Yes
26–27	Reserved	No
28-31	File name characters 12-13 (Unicode)	Yes



Bytes 0-31 Long file name

```
00041 74 00 65 00 73 00 74 00 66 00 0F 00 8C 6F 00 6C 00 64 00 65 00 72 00 10 e·s·t·f···□o·l·d·e·r·
02400 00 00 00 FF FF FF FF 54 45 53 54 46 4F 7E 31 20 20 20 10 00 3C 23 96 ₺・・・ÿÿÿŸTESTF0~1
04839 3R 39 3B 00 00 24 96 39 3B 02 00 00 00 00 00 41 74 00 65 00 73 00 74 /9;9;···$|9;·····At·e·s·t
07200 66 Q0 0F 00 2C 6F 00 6C 00 64 00 65 00 72 00 31 00 00 00 00 FF FF | f···,o·l·d·e·r·l····ÿÿ
09654 45 53 54 46 4F 7E 32 20 20 20 10 00 40 2B 96 39 3B 39 3B 00 00 2C 96 | TESTF0~2
50400 00 00 00 00 00 00
```

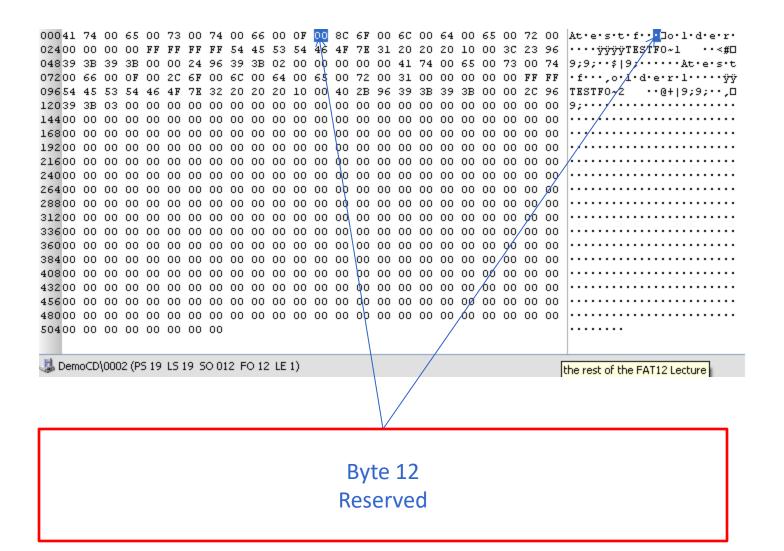
Byte 0
Sequence Number and allocation status (0xe5 if unallocated)



Bytes 1-10
File name characters 1-5 (Unicode)

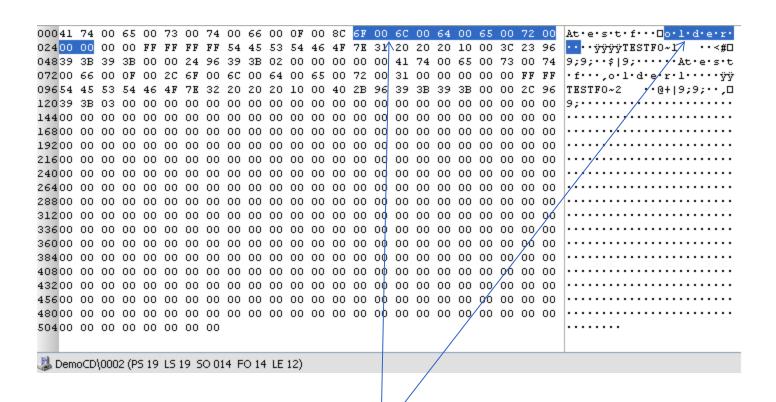
```
00041 74 00 65 00 73 00 74 00 66 00 0F 00 8C 6F 00 6C 00 64 00 65 00 72 00 At∙e∙s∙t∙f∙<mark>•</mark>•□o·l·d·e·r•
04839 3B 39 3B 00 00 24 96 39 3B 02 00\00 00 00 00 41 74 00 65 00 73 00 74 |9;9;··$|9;····At·e·s·t
07200 66 00 0F 00 2C 6F 00 6C 00 64 00\65 00 72 00 31 00 00 00 00 00 FF FF
09654 45 53 54 46 4F 7E 32 20 20 20 10 \00 40 2B 96 39 3B 39 3B 00 00 2C 96
50400 00 00 00 00 00 00
```

Byte 11 File attributes



```
00041 74 00 65 00 73 00 74 00 66 00 0F 00 30 6F 00 6C 00 64 00 65 00 72 00 Atrestforported to the contract of 
02400 00 00 00 FF FF FF FF 54 45 53 54 46 4F 7E 31 20 20 20 10 00 3C 23 96
04839 3B 39 3B 00 00 24 96 39 3B 02 00 00 00 00 00 41 74 00 65 00 73 00 74 9;9;··$|9;/·····At·e·s·t
07200 66 00 0F 00 2C 6F 00 6C 00 64 00 65 00 72 00 31 00 00 00 00 00 FF FF
09654 45 53 54 46 4F 7E 32 20 20 20 10 00 40 2B 96 39 3B 39 3B 00 00 2C 96
50400 00 00 00 00 00 00 00
DemoCD\0002 (PS 19 LS 19 SO 013 FO 13 LE 1)
```

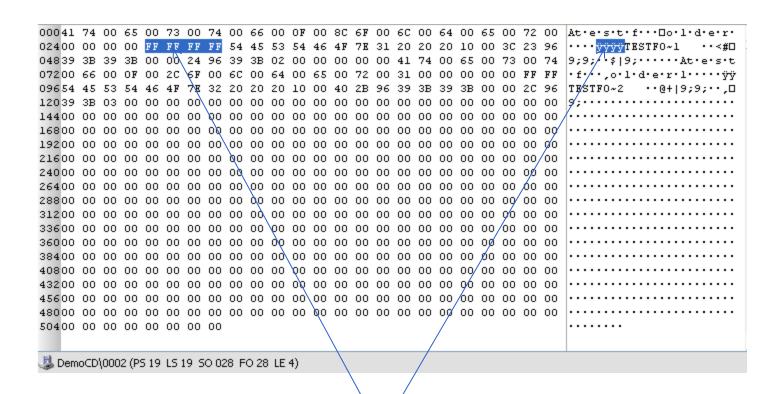
Byte 13 Checksum



Bytes 14-25 File name characters 6-11 (Unicode)

```
00041 74 00 65 00 73 00 74 00 66 00 OF 00 8C 6F 00 6C 00 64 00 65 00 72 00
02400 00 00 00 FF FF FF FF 54 45 53 54 46 4F 7E 31 20 20 20 10 00 3C 23 96
04839 3B 39 3B 00 00 24 96 39 3B 02 00 00 00 00 041 74 00 65 00 73 00 74
07200 66 00 0F 00 2C 6F 00 6C 00 64 00 65 00 72 00 31 00 00 00 00 00 FF FF
09654 45 53 54 46 4F 7E 32 20 20 20 10 00 40 2B 96 39 3B 39 3B 00 00 2C 96,
40800 00 00 00 00 00 00 00 00 00 ào 00 00 00 00 00 00 00 Ø0 00 00 00 00
48000 00 00 00 00 00 00 00 00 00 0\alpha 00 00 00 00 00 00 \alpha
50400 00 00 00 00 00 00 00
DemoCD\0002 (PS 19 LS 19 SO 026 FO 26 LE 2)
```

Bytes 26-27 Reserved



Bytes 28-31 File name characters 12-13 (Unicode)

Questions?

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