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Standard Floppy Disk Formats Supported by MS-DOS

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SUMMARY

By using DRIVER.SYS and/or the DRIVPARM command in the CONFIG.SYS file, you can select a variety of floppy disk formats for use with MS-DOS. The tables below describe the standard floppy disk formats supported by various versions of MS-DOS and show the switches used for DRIVER.SYS and FORMAT.EXE.

MORE INFORMATION

The tables below include information on the following:

Number of heads (sides) Number of cylinders (tracks) Number of sectors per track Total number of sectors Number of free sectors Number of sectors per cluster Total number of clusters Number of sectors per FAT (file allocation table) Number of FAT copies Number of root directory sectors Number of reserved sectors Number of hidden sectors Number of bytes per sector Number of bytes per cluster Number of root directory entries The media descriptor byte for each format What recording density was used to create the floppy disk Under what MS-DOS version this format was first supported What parameter to use with DRIVER.SYS for this format What parameter to use with FORMAT.EXE for this format Whether or not the changed-diskette line is supported

NOTES

1. The switches shown for DRIVER.SYS can also be used for DRIVPARM. Example: The line "Device=C:\DOS \DRIVER.SYS /D:1 /F:9 /C" in the CONFIG.SYS file specifies that floppy disk drive B is a 2.88-megabyte (MB) 3.5-inch floppy disk drive that supports the changed-diskette line.

   Example: The line "DRIVPARM=/D:1 /F:9 /C" in the CONFIG.SYS file specifies that the floppy disk drive B is a 2.88-MB 3.5-inch floppy disk drive that supports the Change line.

   Example: The command "FORMAT B: /F:720" formats a double-sided double-density 720K floppy disk in a 1.44-MB or 2.88-MB 3.5-inch floppy disk drive that is installed in the computer as floppy disk drive B.

2. The following charts refer to "Clusters," whereas MS-DOS 5.0 and later refer to "Allocation Units." These two terms are equivalent and describe the same data structure.

3. Multiple formats with the same DRIVER.SYS switch is NOT an error.

4. Multiple formats with the same media descriptor byte does NOT indicate an error.

5. Valid media descriptor bytes for MS-DOS are listed below:

   Byte Capacity Media Size and Type -- F0 2.88 MB 3.5-inch, 2-sided, 36-sector F0 1.44 MB 3.5-inch, 2-sided, 18-sector F9 720K 3.5-inch, 2-sided, 9-sector F9 1.2 MB 5.25-inch, 2-sided, 15-sector FD 360K 5.25-inch, 2-sided, 9-sector FF 320K 5.25-inch, 2-sided, 8-sector FC 180K 5.25-inch, 1-sided, 9-sector FE 160K 5.25-inch, 1-sided, 8-sector FE 250K 8-inch, 1-sided, single-density FD 500K 8-inch, 2-sided, single-density FE 1.2 MB 8-inch, 2-sided, double-density F8 ----- Fixed disk

6. Both track and cylinder numbers are zero-based. For example, 360K 5.25-inch floppy disks have 40 tracks numbered 0 through 39. Similarly, head numbers and side numbers are also zero-based. For example, 360K 5.25-inch floppy disks have sides 0 and 1 (corresponding to heads 0 and 1). However sectors are one-based. For example, 360K 5.25-inch floppy disks have sectors numbered 1 through 9.

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3.5 Inch

Formatted Capacity 720K 1.44 MB 2.88 MB

of Heads (Sides) 2 2 2 # of Cyls (Tracks) 80 80 80 # of Sectors/Track 9 18 36 Total # of Sectors 1440 2880 5760 # of Free Sectors 1426 2847 5726 # Sectors/Cluster 2 1 2 Total # of Clusters 713 2847 2863 # Sectors/FAT 3

9 9 # of FAT Copies 2 2 2 # of Root Dir Sectors 7 14 15 # Reserved Sectors 1 1 1 # of Hidden Sectors 0 0 0 # of Bytes/Sector 512 512 512 # of Bytes/Cluster 1024 512 1024 # Root Dir Entries 112 224 240 Media Descriptor F9 F0 F0 Recorded Density Double High High MS-DOS Version Began 3.20 3.30 5.00 DRIVER.SYS Switch /F:2 /F:7 /F:9 FORMAT.EXE Switch /F:720 /F:1.44 /F:2.88 Change-Line Support YES YES YES 5.25 Inch

Formatted Capacity 160K 180K 320K 360K 1.2 MB

of Heads (Sides) 1 1 2 2 2 # of Cyls (Tracks) 40 40 40 40 80 # of Sectors/Track 8 9 8 9 15 Total # of Sectors 320 360 640 720 2400 # of Free Sectors 313 351 630 708 2371 # Sectors/Cluster 1 1 2 2 1 Total # of Clusters 313 351 315 354 2371 # of Sectors/FAT 1 2 1 2 7 # of FAT Copies 2 2 2 2 2 # of Root Dir Sectors 4 4 7 7 14 # Reserved Sectors 1 1 1 1 1 # of Hidden Sectors 0 0 0 0 0 # of Bytes/Sector 512 512 512 512 512 # of Bytes/Cluster 512 512 1024 1024 512 # Root Dir Entries 64 64 112 112 224 Media Descriptor FE FC FF FD F9 Recorded Density Double Double Double Double High MS-DOS Version Began 1.00 2.00 1.10 2.00 3.00 DRIVER.SYS Switch /F:0 /F:0 /F:0 /F:0 /F:1 FORMAT.EXE Switch /F:160 /F:180 /F:320 /F:360 /F:1.2 Change-Line Support NO NO NO NO YES 8-Inch

Formatted Capacity 250K 500K 1.2 MB

of Heads (Sides) 1 2 2 # of Cyls (Tracks) 77 77 77 # of Sectors/Track 26 26 8 Total # of Sectors 2002 4004 1232 # of Bytes/Sector 128 128 1024 # of Bytes/Cluster 512 512 1024 # Sectors/Cluster 4 4 1 Total # of Clusters 497 997 1227 # Reserved Sectors 1 4 1 # of Hidden Sectors 3 0 0 # Sectors/FAT 6 6 2 # of FAT Copies 2 2 2 # Root Dir Entries 68 68 192 Media Descriptor FE FD FE Recorded Density Single Single Double MS-DOS Version Began 1.00 2.00 2.00 Change-Line Support NO NO NO

APPLIES TO

- Microsoft MS-DOS 1.0 Standard Edition
- Microsoft MS-DOS 2.11 Standard Edition
- Microsoft MS-DOS 3.1
- Microsoft MS-DOS 3.2 Standard Edition
- Microsoft MS-DOS 3.21 Standard Edition
- Microsoft MS-DOS 3.3 Standard Edition
- Microsoft MS-DOS 3.3a
- Microsoft MS-DOS 4.0 Standard Edition
- Microsoft MS-DOS 4.01 Standard Edition
- Microsoft MS-DOS 5.0 Standard Edition
- Microsoft MS-DOS 5.0a
- Microsoft MS-DOS 6.0 Standard Edition
- Microsoft MS-DOS 6.2 Standard Edition
- Microsoft MS-DOS 6.21 Standard Edition
- Microsoft MS-DOS 6.22 Standard Edition

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