MAXI Disk
version 4w

USER'S Guide

(v4w: 96-11-11)

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The Fine Print

End User License
For a complete description of the end user license, please read the file "LICENSE.DOC" included with this package. If the "LICENSE.DOC" file is missing from this package, please contact us. You can also view the license from the online help file "MAX4W.HLP".

Vendor Distribution Requirements
For a complete description of the Vendor Distribution Requirements, please read the file "VENDOR.DOC" included with this package. If the "VENDOR.DOC" file is missing from this package, please contact us. You can also view the distribution requirements from the online help file "MAX4W.HLP". Standard catalog descriptions can be found in the files "INFO.DOC" and "FILE_ID.DIZ".

Warranty
Users of the Software must accept this disclaimer of warranty:

Contact Information

Our mailing address is:
Herne Data Systems Ltd.
PO Box 250
Tiverton, ON N0G 2T0 CANADA

Tel: Voice/FAX (519) 366-2732
e-mail: herne@herne.com,
or 72060.1153@compuserve.com
WWW: http://www.herne.com

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How To Register

> ***This section only applies to the unregistered "Evaluation" version of MAXI Disk. If you have already registered, or have purchased a fully registered copy of MAXI, then thank you!***

You can order a registered copy of MAXI Disk by mail, telephone, FAX or through our website. The single user license fee for MAXI Disk is $25 (US) or $29 (CDN). The unlimited user site license is $100 (US) or $125 (CDN).We accept payment via cheque (in US or Canadian dollars) or by VISA card. We also accept government, corporate and institutional purchase orders. All products are shipped via first class post or air mail. Standard shipping charges are $2 for US and Canadian addresses, $4 for all others. Canadian prices include GST. Ontario residents, please add 8% PST. Use the handy Registration Form contained in the file "REGISTER.DOC"regform.

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You can order with Amex, Discover, MasterCard, or Visa from Public (software) Library by calling 800-2424-PsL or 713-524-6394 or by FAX to 713-524-6398 or by CIS Email to 71355,470. You can also mail credit card orders to PsL at P.O.Box 35705, Houston, TX 77235-5705.

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Any questions about the status of the shipment of the order, refunds, registration options, product details, technical support, volume discounts, dealer pricing, site licenses, non-credit card orders, etc., must be directed to Herne Data Systemscinfo.

To insure that you get the latest version, PsL will notify us the day of your order and we will ship the product directly to you.

Registration Benefits

All registered users will receive a copy of the latest version of MAXI Disk, along with free technical support and updates for 60 days. Registered users can also update to later versions (beyond the initial 60 day free support period) for a nominal update fee of $5.00 plus $2.00 postage and handling.

Introduction

MAXI Disk was first introduced in 1988 as a DOS based, deluxe menu driven version of MAXI Form. The current version 4 for Windows, offers all of the functionality of the original MAXI Form and MAXI Disk, along with the capability to:

- Automatically determine the type and number of floppy drives on your system;
- Format Microsoft 1.7 meg DMF disks;
- Format Macintosh 1.44 meg disks;
- Copy any type of DOS disk in one easy step, including MAXI style extended capacity disks and DMF disks;
- Copy Macintosh 1.44 meg disks;
- Analyze an unknown disk and determine its type;
- Easy to use Windows front end.

MAXI style extended capacity disks give you 420k on a 360k disk, 800k on a 720k disk, 1.4 meg on a 1.2 meg disk, 1.6 meg on a 1.44 meg disk, and 3.2 meg on a 2.88 meg disk.

MAXI Disk works with Windows 3.1 as well as Windows'95. Like MAXI Form, MAXI Disk will only format floppy disks. It will not let you format a hard drive, even accidentally.

MAXI style extended capacity disks can be used just like any other DOS disk, but you can fit more data, programs, or whatever you like on them. With MAXI extended capacity disks, you can store larger files on a disk, and use fewer disks for a hard drive backup.

MAXI style disks require DOS 3.2 or later, and are completely transparent to DOS. They can be used interchangeably on your system with regular DOS disks. On some systems, you may need to install the SMAX usmax driver to be able to read and write the disks. On other systems, you can add a few simple lines to your CONFIG.SYS file to allow reliable reading and writing of the disks.

Installing MAXI Disk

MAXI Disk is not copy protected or crippled in any way, nor does it contain any code to disable usage after a certain period of time.

MAXI can be installed in a few simple steps:

    1) Create a subdirectory on your hard drive (such as c:\max4win\).

    2) Copy the files from your distribution disk to this subdirectory.
    (Note: If MAXI Disk was obtained as a .ZIP file, you will have to UNZIP the file before
        proceeding.)

    3) Select a program group window where you want MAXI Disk to appear. Using
        Program Manager, select "File", then "New" and pick "Program Item". Assuming
        you put the program files in the directory "c:\max4win\", type in "MAXI" on the
        "Description" line, "c:\max4win\max4w.exe" on the "Command line" line, and "c:\
        max4win\" on the "Working Directory" line.

    4) Press OK, and you are done.

This simple manual installation method gives you complete control over where and how the software is installed. MAXI does not make any changes to any of your DOS or Windows system or configuration files.

If you are planning to take advantage of the MAXI style extended capacity disks, we recommend that you add the following line to your **AUTOEXEC.BAT** file:
 SMAX I
to automatically load the SMAX driver when you boot, OR add the following lines to your **CONFIG.SYS**:

```
        DRIVPARM /D:0 /S:40   rem - for Drive A
        DRIVPARM /D:1 /S:40   rem - for Drive B
        DRIVPARM /D:0 /S:18   rem - reset to default
        DRIVPARM /D:1 /S:18   rem - reset to default
```

Either of these two methods will allow DOS/Windows to access the extended capacity disks.

SMAX is not required by MAXI itself to format or copy extended capacity disks.

Setup and Customization

You can customize MAXI in a number of different ways. Most of the major customization features can be controlled from the Setup screen. (To reach the Setup screen, press the "Setup" button on the main MAXI screen).
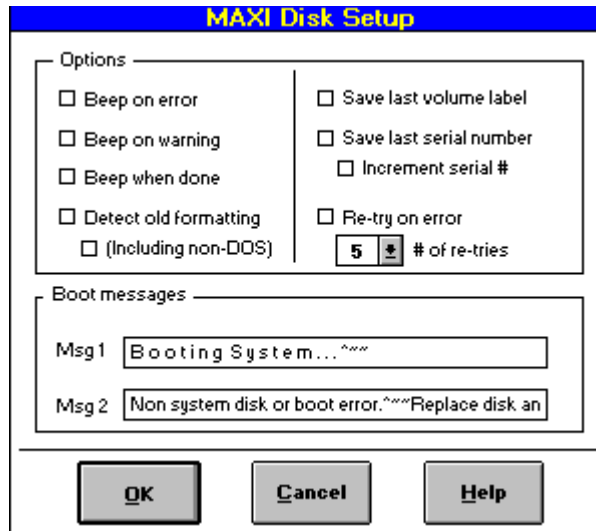
Setup Parameters

The following parameters can be changed from the Setup screen:

MAXI can use a series of audio alerts or beep tones to notify you when it detects an error or warning. Check the "Beep" boxes to enable audio alerts for errors, warnings, or when the formatting is complete.

When the "Detect old formatting" box is checked, MAXI will automatically check to see if a disk was previously formatted before trying to re-format it. With the "Non-DOS" box also checked, MAXI will also check for disks such as Macintosh HD and any other kind that uses 512 byte sectors.

When Verify is on, MAXI will attempt to repeat an operation when an error is encountered during the formatting cycle. The number of repeat attempts is specified in the "retry" box.

MAXI can keep track of the last used disk Volume Label and Serial Number if these boxes are checked. If the "Increment serial number" box is checked, MAXI will produce a sequential set of disk serial numbers for each disk formatted. You can start at any number you choose.

MAXI Disk lets you use custom messages in the boot sector of your floppy disks. Two

messages are stored in the boot sector:

Msg1 is the message displayed during normal boot, such as "Booting system...".
       Maximum length is 44 characters.

Msg2 is the message displayed if error during booting, such as "Non-system disk...
       replace and reboot". Maximum length is 64 characters.

The symbol ~ (tilde) is used to insert a carriage return into the message, and ^ (caret)
inserts a linefeed.

When you are done making changes, pressing the OK button will save the new defaults
and return to the main screen.

To return to the main screen without saving the new values, press the CANCEL button.

Pressing the HELP button will open the help file.

.INI File Settings

Note: Parameters marked with * must be changed by manually editing the MAX4W.INI
       file. All other values are automatically saved by MAXI Disk when you exit the
       program or change them via the SETUP screen.

Parameter	Comments
[SETUP]	
DefDrive=0	Default drive to do format on. Number refers to sequence in "target drive" list box. 0 = first entry, 1 = second entry, etc. It does not refer to a physical drive letter.
DefType=0	Default type of disk to format. Number refers to sequence in "disk type" list box.
CopyFrom=0	For disk copy operations, default drive to copy from (Source drive). Number refers to sequence in "source drive" list box.
CopyTo=0	For disk copy operations, default drive to copy to (Target drive). Number refers to sequence in "target drive" list box.
CopyVia=0	For disk copy operations, default drive to copy through (if source and target drives are the same, this drive is used to temporarily store the source disk contents.). Number refers to sequence in "via drive" list box.

SystemDrive=1   Default drive to copy system files from. Number refers to
                              sequence in the "system drive" list box.

Type360=0   Last selected disk type for a 360k drive.
                              Number refers to sequence in "disk type" list box.

Type720=0   Last selected disk type for a 720k drive.
                              Number refers to sequence in "disk type" list box.

Type1200=0   Last selected disk type for a 1.2 meg drive.
                              Number refers to sequence in "disk type" list box.

Type1440=0   Last selected disk type for a 1.44 meg drive.
                              Number refers to sequence in "disk type" list box.

Type2880=0   Last selected disk type for a 2.88 meg drive.
                              Number refers to sequence in "disk type" list box.

[OPTIONS]
Verify=1   Verify during format. 0 = no, 1 = yes

BootMode=0   Keep old boot sector during quick re-format.

System=0   Copy system files to new disk.

QuickFormat=0   Do a "quick format". (Erasing directory and FAT without
                              doing a physical format of the disk.)

IncludeVolumeLabel=0   Include a volume label on new disk.

VolumeLabel=TEST   Default volume label to include.

KeepLabel=0   Save last used volume label.

IncludeSerialNumber=0   Include a serial number on new disks (for DOS 4.0 or later).

SerialNumber=00000000   Default serial number to include. (8 digit hexadecimal number).

KeepSerial=0   Save last used serial number.

IncrementSerial=0   Automatically increment serial number field with each disk
                              formatted.

DirectorySortMode=0   Order to sort the directory display by:
                                       0 = filename, 1 = file extension, 2 = file size,
                              3 = file date

DirectorySortRev=1   0 = Use low to high sort order.
                                          1 = Use high to low sort order.

MacDirectorySortMode=0   Order to sort the directory display by:
                                          0 = filename, 1 = (not used), 2 = file size, 3
                                = file date

MacDirectorySortRev=1   0 = Use low to high sort order.
                                          1 = Use high to low sort order.

Beep=0   Settings for audio alerts. OR'd value of:
                                                        1 = Beep on error
                                                        2 = Beep on warning
                                                        4 = Beep when done formatting

DetectOldFormat=1   Detect if a disk was formatting and display a warning.

DetectNonDOS=1   Detect non-DOS disks as well as DOS disks (anything
                                formatted as 512 bytes/sector)

Retry=5   Number of times to retry formatting when
                                VERIFY is on and an error is detected.

[MANUAL]
DriveMode=0   0 = Automatically determine types of disk
                                drives. Value is ignored.

[CUSTOM]
Bootmsg1=B o o t i n g S y s t e m . . .~^^
                                                        Message to display during normal booting
                                from floppy disk. ~ represents carriage return (ASCII 13), ^
                                represents linefeed (ASCII 10).

Bootmsg2=Non-system disk or boot error.~^^Replace disk and re-boot.~^
                                                        Message to display if error is encountered
                                during a boot.

NumBootFiles=3   * Number of files to copy when making a system disk.
                                Default is 3. Up to 8 are supported.

BootFile1=IO.SYS   * Name of first boot file. Default is IO.SYS

BootFile2=MSDOS.SYS   * Name of second boot file. Default is MSDOS.SYS

BootFile3=COMMAND.COM * Name of third boot file. Default is COMMAND.COM

BootFile4=AUTOEXEC.BAT * Name of fourth boot file. Default is AUTOEXEC.BAT

BootFile5=CONFIG.SYS   * Name of fifth boot file. Default is CONFIG.SYS

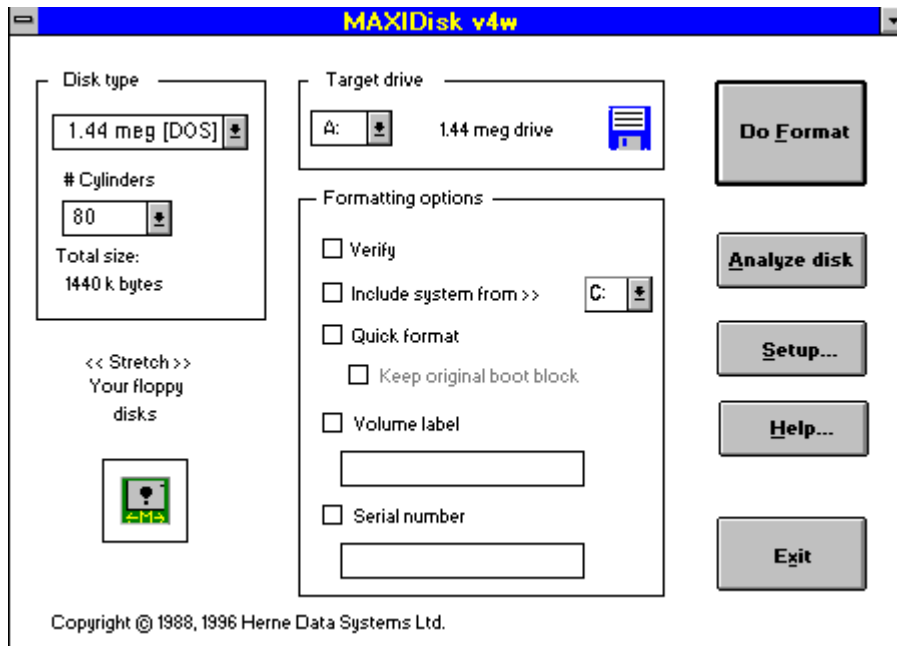BootFile6=   * Name of sixth boot file. Default is none.

BootFile7=   * Name of seventh boot file. Default is
                         none.

BootFile8=   * Name of eighth boot file. Default is none.

Using MAXIDisk

MAXI uses standard Windows commands for navigating the screen. All functions are available from the main screen, or from one of the secondary screens, such as Copy disk, Analyze disk, or Setup.

Selecting the Target Drive
The Target Drive is the one you want to format a disk on. MAXI will automatically catalog your floppy drives and determine the type of each. Only floppy drives will appear in the selection box. The last used target drive is saved in the MAX4W.INI file.

MAXI supports the following drive types:

> 360k 5-1/4" double density
> 1.2 meg 5-1/4" high density
> 720k 3-1/2" double density
> 1.44 meg 3-1/2" high density
> 2.88 meg 3-1/2" extra high density

MAXI Disk will automatically detect the drive type. The colored disk icons can be used throughout MAXI Disk to identify different types of drives and disks.

Selecting the Disk Type
MAXI will automatically list the types of disks supported by the selected target drive. Choose the type of disk you want to format.

MAXI supports the following disk types:

Standard DOS -
    360k 5-1/4"; 720k 3-1/2"; 1.2 meg 5-1/4"; 1.44 meg 3-1/2"; 2.88 meg 3-1/2"

MAXI extended capacity -
    420k 5-1/4"; 800k 3-1/2"; 1.4 meg 5-1/4"; 1.6 meg 3-1/2"; 1.7 meg 3-1/2" (Microsoft
    DMF); 3.2 meg 3-1/2"

Other -
    Macintosh 1.44 meg 3-1/2" high density

The types of disks appearing in the selection box will depend on the currently selected
target drive. The last used type for each target drive is saved in the MAX4W.INI file.

MAXI will also let you squeeze a few extra cylinders (tracks) out of your drives. Most
drives can go a few beyond the normal 40 or 80 tracks used by DOS. Each extra one
will add extra space to your disks. This will work with both regular DOS disks and MAXI
style disks.

Formatting Options

With the "Verify" box checked, MAXI will read each track as it is formatted to make sure
it is OK. A disk will format faster without the Verify on, but bad sectors will not be locked
out, so you may get disk errors later.   Use which ever setting you are comfortable with.

With the "Include system files" box checked, MAXI will copy the MS-DOS boot files to
the new disk. Normally these are IO.SYS, MSDOS.SYS, COMMAND.COM,
AUTOEXEC.BAT and CONFIG.SYS. See customizingcustom for details on changing
the defaults.

With the "Quick re-format" box checked, MAXI will erase the directory and FAT of the
disk without doing a physical re-format. If "Verify" is also checked, MAXI will read the
disk tracks to check for errors. The old boot sector of the disk will be replaced with a
new one from MAXI, unless the "Keep original boot block" boxjkeep_boot is also
checked.

Normally, MAXI will write a new DOS 4/5/6 style boot sector to a reformatted disk. This
boot sector will work with virtually all machines and versions of DOS. If, however, you
wish to keep the original boot sector on the disk, check the keep original boot block box.

Note: if you check this box, make sure the original boot sector is not infected with a
            virus!

DOS allows you to assign a name or "Volume Label" to a disk. If you want to include a
volume label during formatting, check the "Volume label" box and enter the label in the
edit field below it. MAXI can keeps_save the last used volume label for future reference.

DOS 4.0 or later allows you to assign a "Serial Number" to a disk. If you want to include a serial number during formatting, check the "Serial number" box and enter the number in the edit field below it. The number should be an eight digit hexadecimal number, such as 8DB0CA77. MAXI can keeps_save the last used serial number for future reference, and can also increments_save the number automatically with each disk formatted to give you a sequential set of disks.

Starting the Formatting Cycle
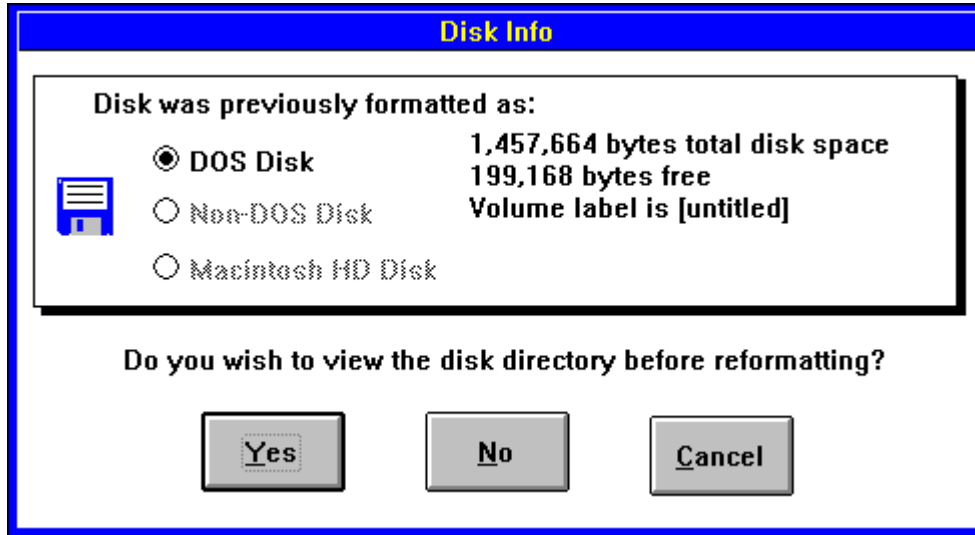To start formatting a disk, press the "Do Format" button on the main screen.

NOTE: ***Formatting will destroy all previous data on the disk. Once it is re-formatted, you will not be able to recover any data that was on the disk previously.***

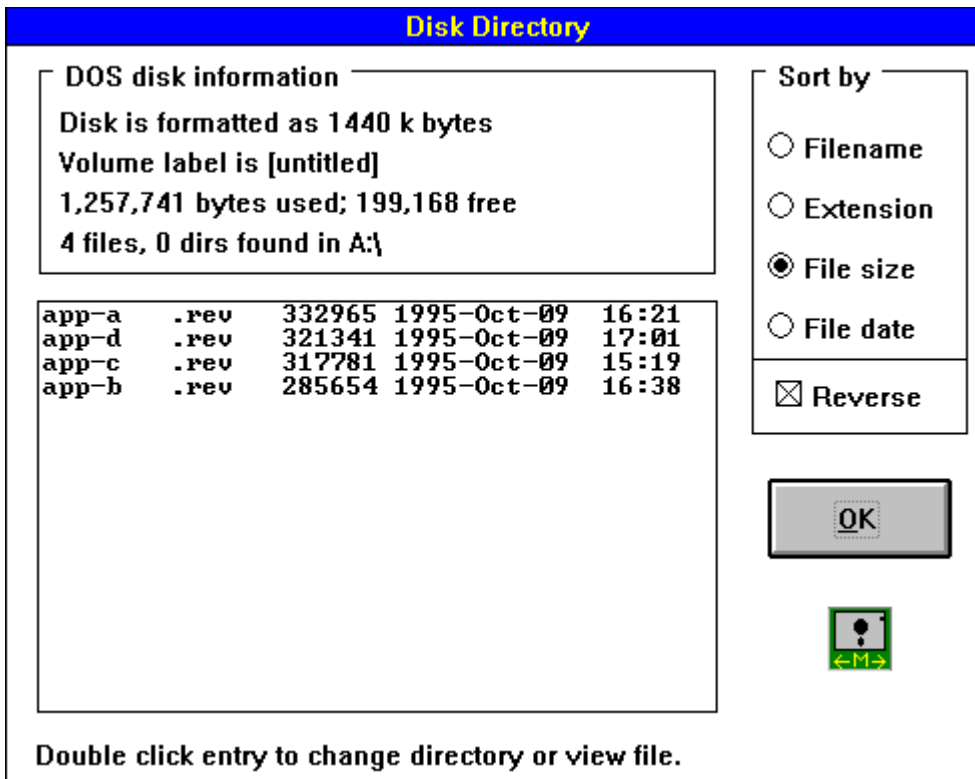You will be presented with the following screen prompt to insert a disk into the selected drive:
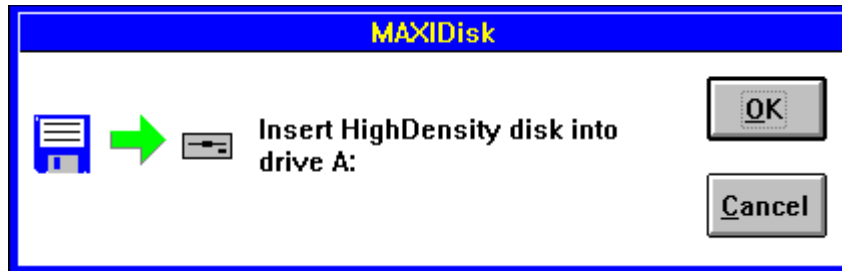
Press "OK" to continue, or "Cancel" to cancel the formatting process and return to the main screen.

If the "detect old format"s_detect setup option is enabled, MAXI will analyze the disk, and if it was previously formatted, will display the disk type in the "Disk Info" dialog box:

Disk Info

Disk was previously formatted as:

⦿ DOS Disk

○ Non-DOS Disk

○ Macintosh HD Disk

1,457,664 bytes total disk space
199,168 bytes free
Volume label is [untitled]

Do you wish to view the disk directory before reformatting?

[<u>Y</u>es]   [<u>N</u>o]   [<u>C</u>ancel]

MAXI will detect any kind of DOS disk, Macintosh high density 3.5 inch disks, and any non-DOS disk formatted with 512 byte sectors. If it is a DOS or Macintosh disk, you can view the directory before re-formatting the disk, by pressing the "Yes" button.

Disk Directory

DOS disk information

Disk is formatted as 1440 k bytes
Volume label is [untitled]
1,257,741 bytes used; 199,168 free
4 files, 0 dirs found in A:\

```
app-a    .rev    332965 1995-Oct-09    16:21
app-d    .rev    321341 1995-Oct-09    17:01
app-c    .rev    317781 1995-Oct-09    15:19
app-b    .rev    285654 1995-Oct-09    16:38
```

Sort by

○ Filename

○ Extension

⦿ File size

○ File date

☒ Reverse

[<u>O</u>K]

Double click entry to change directory or view file.

For both DOS and Macintosh disks, you can change directory levels by double clicking on the directory entry. For DOS disks, you can also view the contents of the file by double clicking on a file entry. The file can be displayed in Hex format, decimal format, or as a straight text file, using either the ASCII or the Windows character sets.

Press the "OK" button when you have finished viewing the directory to return to the "Disk Info" dialog box.

For a DOS or Macintosh disk, if you do not wish to view the directory first, press the "No" button in the "Disk Info" dialog box. Press the "Cancel" button to return to the "Insert Disk" dialog box.

For a non-DOS, non-Macintosh disk, press the "Yes" button to continue formatting, or the "No" button to cancel and return to the "Insert Disk" dialog box.

Once the formatting process has started, a status screen will be displayed showing the current progress. If you wish to cancel the formatting before it is completed, press the <Esc> ("Escape") key. Note that if the disk formatting has been interrupted this way, the disk will probably not be usable.

Copying a Disk

MAXI Disk can be used to make copies of your disks, including ones that DOS DISKCOPY, and Windows File Manager cannot copy, such as DMF disks. You can also copy to different types of disks, such as making a copy of a 1.2 meg 5-1/4" disk on a 1.44 meg 3-1/2" disk. MAXI Disk is very flexible in the types of disks it can copy. However, not all oddball combinations will work (e.g. you will not be able to copy a 1.44 meg 3-1/2" disk to a 1.2 meg 5-1/4" disk, even though MAXI will appear to let you.) MAXI will also copy Macintosh HD disks.

To make a copy of a disk, press the "Copy Disk" button on the main screen. When the "Copy Disk" dialog box appears, select the "source" and "target" drives. These can be the same (for a single drive copy) or different. Also select the drive for the temporary file created by the copying process. This is normally drive C:. Make sure that this drive has enough space on it to hold the data from the disk you wish to copy. (E.g. copying a 1.44 meg disk, requires 1.44 meg of temporary space on the drive). The temporary file is erased once you finish the copying process.
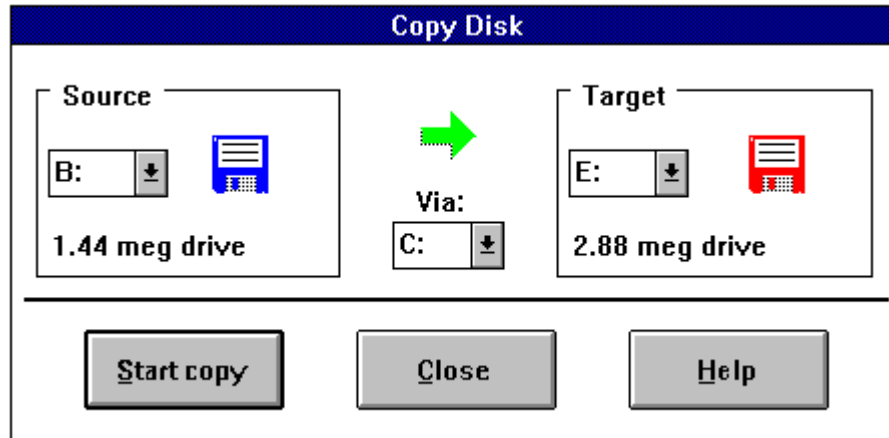
MAXI will check to see if the target disk is formatted before making a copy. If it is, you will be given a chance to view the disk before re-formatting it.

You can make multiple copies of a single master disk, without having to re- read the source disk each time. Just insert a new target disk into the drive when prompted.

Analyzing a Disk
MAXI can analyze an unknown disk, and if it is a DOS or Macintosh disk, let you view the disk directory.

Select the drive to use with the target drivejsel_drive option on the main window.

For both DOS and Macintosh disks, you can change directory levels by double clicking on the directory entry. For DOS disks, you can also view the contents of the file by double clicking on a file entry. The file can be displayed in Hex format, decimal format, or as a straight text file, using either the ASCII or the Windows character sets.

Press the "OK" button when you have finished viewing the directory to return to the main screen.

On-line Help
MAXI Disk is supplied with an on-line help file, **MAX4W.HLP**, in standard Windows Help format. To display the MAXI Disk Windows Help file, select a topic from the Help menu on the main screen, or press the HELP button on any of the dialog boxes which include one. Once the Help file is displayed, you can navigate the file using standard Windows Help search commands and hyper links. The Help file is based on the contents of this documentation file.

Using the SMAX Driver

While DOS versions 3.2x and later can automatically handle the housekeeping required to access MAXI style extended capacity disks, the BIOS and hardware on many systems will not. SMAX.COM is a memory resident driver which is used to improve the compatibility of MAXI extended capacity disks with some combinations of hardware and DOS. It is not a true device driver in the conventional sense of DOS terminology. Rather, it is a simple TSR (terminate but stay resident) program which patches into the BIOS disk interrupt vector (interrupt hex 13) and changes the EOT (end of track, or last sector in a track) parameter to match the increased value of the MAXI extended capacity disks when it detects a disk read or write operation. MAXI Form v1.8 or later, MAXI Disk for DOS v3.2 or later, MAXI Disk for Windows v4 or later, and FreeForm v2.3 or later will automatically configure SMAX for the type of disk being formatted. SMAX will automatically configure itself for the read/write operations to allow transparent access to all DOS and MAXI formatted disks, regardless of density. (SMAX is not required to installed when using MAXI Disk itself, including copying system files).

You may be able to eliminate the use of SMAX on your system by modifying your CONFIG.SYS file, as shown above in "Installing MAXI".

SMAX MAY BE FREELY COPIED AND DISTRIBUTED TO YOUR FRIENDS FOR THEIR PRIVATE, NON-COMMERCIAL USE (SO THAT THEY CAN READ FILES WHICH YOU MAY SEND THEM ON MAXI FORMATTED DISKS) PROVIDED THAT THE COPYRIGHT NOTICE IS NOT REMOVED. THIRD PARTY SOFTWARE DEVELOPERS OR VENDORS WISHING TO INCLUDE SMAX WITH THEIR OWN COMMERCIAL PRODUCTS REQUIRE THE PRIOR WRITTEN PERMISSION OF HERNE DATA SYSTEMS ALONG WITH A RUNTIME DISTRIBUTION LICENSE.

When to Use SMAX

To determine whether or not you need to use SMAX with your system configuration, perform the following simple test:

- Format an extended capacity (420k/800k/1.4meg/1.6 meg/1.7 meg/3.2 meg) disk with MAXI Disk, using the largest capacity floppy drive on your system (e.g. if you have both a 1.2 meg drive and a 1.44 meg, use the 1.44 meg drive).

- Try to copy a number of relatively long files (e.g. over about 50k bytes long each) to the new disk using the DOS COPY or XCOPY command or Windows File Manager or equivalent.

- If you get an error message (e.g. 'general failure reading drive ...' or 'sector not found') then you need to install SMAX to use the MAXI formatted extended capacity disks.

Installing SMAX

BECAUSE IT IS A TERMINATE-AND-STAY-RESIDENT PROGRAM, DO NOT INSTALL SMAX FROM A DOS WINDOW (UNDER MS WINDOWS) OR THROUGH A MENU SHELL SUCH AS DOS 5 OR 6 DOSSHELL. IF YOU DO, YOUR SYSTEM MAY LOCK UP WHEN YOU TRY TO ACCESS ANY KIND OF DISK (INCLUDING THE HARD DRIVE). HOWEVER, ONCE SMAX HAS BEEN INSTALLED, YOU CAN CHANGE ITS CONFIGURATION FROM A DOS WINDOW OR THROUGH A MENU SHELL.

To install SMAX automatically on a cold boot, type the following command at the DOS prompt (or insert the line into your AUTOEXEC.BAT file):

SMAX <Enter>

SMAX checks to see that you are using DOS 3.20 or later before installing itself. Once installed, SMAX remains resident in your computer's RAM and is active for all floppy drives on your system. The resident portion of SMAX requires only 1.5k bytes of memory. SMAX also accepts several command line options. These are:

SMAX 0   Turns off SMAX so that it remains hooked into the interrupt 13h chain, but does nothing. If SMAX is not resident, an error message is displayed. Note that the '0' can be either the letter o (uppercase or lowercase) or the numeral zero.

SMAX 1   Turns on SMAX that has been previously turned off with the 0 option. If SMAX is not resident, it is installed as for a first time installation. Note that the '1' can be either the letter i (uppercase or lowercase) or the numeral one.

SMAX 40 Turns off the 80 track double density mode for 1.2 meg drives to allow them to access 360k/420k disks.

SMAX 80 Turns on the 80 track double density mode for 1.2 meg drives. This allows 720k/800k 5-1/4 inch disks to be formatted and used in 1.2 meg drives with normal 360k DD media. On most systems, this feature is only supported for drives A: and B: due to BIOS limitations. In addition, it will also remove the ability for these drives to access 360k/420k disks.

SMAX A   Sets SMAX to automatic 40 track/80 track sensing mode (where it can read/write either 40 or 80 track double density disks interchangeably). This is the default mode.

SMAX E   Enables SMAX for secondary controlled drives. This is the default mode.

SMAX N   Disables SMAX for secondary controlled drives. The BIOS in some
          secondary floppy disk controller cards, such as those used with some
          external expansion drives, is not compatible with SMAX. This options allows
          SMAX to be used for internal, primary controlled drives, while not interfering
          with the use of secondary controlled drives.

SMAX ?   Checks the current status of SMAX in memory, if present.

If you attempt to install SMAX with no options specified (or with the ? option) when it is
already resident, a status message will be displayed showing the currently active
options. If you attempt to install SMAX with a command line option not listed above, you
will get an error message.

SMAX options can be changed at any time after it is resident in memory by running the
appropriate command line. This will change the current parameters for the copy of
SMAX in memory and will not result in another copy of SMAX being loaded into memory.
SMAX can be loaded into high memory with the DOS 5 or 6 LOADHIGH (LH) command,
provided that your CONFIG.SYS includes the proper XMS and EMM memory managers.
(See your DOS manual for more information on the LOADHIGH command).

Disabling SMAX
SMAX will not normally interfere with the use of standard floppy DOS disks and it is
completely transparent to hard disks. Both regular style DOS disks and MAXI extended
capacity disks can be used interchangeably and transparently on any floppy drive in your
system by most application software such as word processors, spreadsheets and
databases. However, it is recognized that some programs, such as those which access
the disk at the physical sector level or in an unconventional manner (including some
hard disk fast backup utilities and some versions of the DOS FORMAT and DISKCOPY
programs) do not work correctly with SMAX installed. For such cases, SMAX can be de-
activated without re-booting the computer by using one of two command line options as
summarized above:

                        SMAX 0 <Enter>

The 0 option will set a disabling flag within SMAX itself, without actually removing the
code from the interrupt 13h chain. SMAX can then be re-activated using the 1 option
when required. A special compatibility concern may arise when using two floppy disk
controller cards: a primary card and a secondary or add-on card. The primary card may
require SMAX to work correctly, while the BIOS in the secondary card (such as a
CompatiCard, usually controlling external floppy drives) may become confused by
SMAX. In this case, use the SMAX N option to disable SMAX for externally controlled
drives.

80 Cylinder Double Density Mode
The 1.2 meg disk drives used in AT class machines are capable of reading and writing
80 cylinders. Normally this feature is used only in high density mode (1.2 meg or 1.4
meg). However, in order to do this reliably, special (i.e. more expensive) high density

(HD) diskettes are required. Some BIOS's will let you format and use 80 cylinder double density (DD) 5-1/4 inch disks in 1.2 meg drives. However, most will not. With the 80 option of SMAX, you can take advantage of this to get up to 800k on a normal 360k double density disk with any BIOS! This is done by recording the data at the same bit density as normal 360k disks, but with twice the number of cylinders. In terms of reliability, the disks are just as reliable as 360k disks that have been formatted and used in 1.2 meg drives.

Of course, the 80 cylinder DD disks will NOT be usable in 360k drives, but will be usable in the 80 cylinder DD, 5-1/4 inch drives used on some non-standard MS-DOS systems. The 80 option is not required if your BIOS normally supports reading and writing this disk type.

To activate the 80 cylinder mode of SMAX, use the command line:

<div align="center">SMAX 80 <Enter></div>

(Because of limitations of BIOS flag storage areas, this feature is limited to drives A: and B: only. On most systems this is adequate because the standard AT type machine has only two drives with the 1.2 meg drive as A:.) The 80 cylinder mode will not affect normal 80 cylinder disks (i.e. 3-1/2 inch and 1.2/1.4 meg 5-1/4 inch). However, with the 80 cylinder mode activated, you will not normally be able to access 360k/420k disks in the 1.2 meg drive. To de-activate the 80 cylinder mode, use the command line:

<div align="center">SMAX 40 <Enter></div>

This will return the machine to normal 40 cylinder DD mode for 1.2 meg drives. To put SMAX into auto 40/80 mode (the normal default), use:

<div align="center">SMAX A <Enter></div>

Note that MAXI Form v1.8, MAXI Disk v3.2, and FreeForm v2.2 (the three disk formatting utilities designed to work with SMAX) will automatically configure SMAX to the correct settings without the use of the 40/80/A command line switches. When in the default automatic mode, SMAX will configure itself for normal disk reads and writes.

SMAX HOOKS ITSELF INTO BIOS INTERRUPT HEX 13 (THE DISK CONTROLLER INTERRUPT) AND USES INTERRUPT HEX 7E (NOT NORMALLY USED BY THE BIOS, DOS OR OTHER KNOWN PROGRAMS) FOR ITS OWN INTERNAL FUNCTIONS.

Error Messages
The following error messages can be displayed by MAXI Disk:

Fatal Errors
These errors will prevent MAXI from starting up. They will display the error message, then exit.

Insufficient free memory or resources to run MAXI Disk. Close some applications and try again.
MAXI requires 5 kb of code space in low memory (conventional DOS 640k area) This memory may be hogged by other programs currently running, or ones which were running and did not release the memory before quitting or had crashed. If there are no other programs running when you get this message, re-boot Windows and try again.

Insufficient free resources to create disk buffers. Close some applications and try again.
MAXI requires 12 kb of buffer space (25 kb if you have a 2.88 meg drive) in low memory (conventional DOS 640k area) This memory may be hogged by other programs currently running, or ones which were running and did not release the memory before quitting or had crashed. If there are no other programs running when you get this message, re-boot Windows and try again.

Cannot run in Windows REAL mode.
This will only happen if you try to run MAXI in Windows 3.0 under real mode. MAXI requires Standard or Enhanced mode.

Non-Fatal Errors
These errors will likely result in an unusable target disk, but they will not halt the operation of MAXI.

Disk formatting interrupted.
This message is displayed when you interrupt the disk formatting process by either pressing the <Esc> key, or removing the disk from the drive during the formatting process.

Disk was not formatted.
This message is displayed when you try to 'Quick Format' a disk that was not previously formatted. Quick Format reads the previous formatting information from the disk, then erases the directory and FAT without actually physically re-formatting the disk.

Not a DOS or Macintosh disk. Cannot quick format.
This message is displayed when you try to 'Quick Format' a disk that was not previously formatted as a DOS or Mac disk. Quick Format reads the previous formatting information from the disk, then erases the directory and FAT without actually physically re-formatting the disk.

Drive not ready or wrong density disk inserted
This message is displayed when you try to format without a disk in the drive, or you try to format a 720 k disk as a high density (1.44 meg) or vice versa.

Disk is write protected.
This message is displayed when you try to format a disk with the write protect tab on. Remove the write protect and try again.

File not found.
This message is displayed when you try to copy system files to a disk and have not specified the correct path to find the files. Make sure the system files are located in the root directory of the drive selected as the 'System Drive' on the main screen. Also check that your system files are the same as the ones specified in the MAX4W.INI file.

Tips and Hints

- Some primitive boot sector viruses, such as the 'Stoned' virus, can interfere with MAXI formatted disks. If you find that your MAXI style disk no longer works (e.g. files appear corrupted) check your system for a boot sector virus. (Note: this problem also affects Microsoft DMF disks as well. Always write protect your DMF disks before installing software from them!)

- You can make copies of the new Microsoft DMF format 3.5 inch diskettes in one easy step by using the Copy Disk feature of MAXI.

- Some releases of Windows'95 may report "phantom" bad sectors on the disk info screens. To prevent this, always remove the disk from the drive once formatting is complete.

Frequently Asked Questions

What is MAXI Disk?

         MAXI Disk is a floppy disk formatting utility from Herne Data Systems Ltd. which can format special extended capacity DOS compatible disks. 360k becomes 420k, 720k is increased to 800k, 1.2 meg becomes 1.4 meg, 1.44 meg is increased to 1.6 meg or 1.7 meg (DMF format), and 2.88 meg is increased to 3.2 meg. MAXI Disk is designed to format floppy disks only. (In a multi user environment, this helps to protect your hard disks from accidental erasure by in-experienced persons trying to use the DOS FORMAT command.) MAXI Disk requires Windows version 3.x or later running over PC- or MS-DOS version 3.20 or later. It will not run with earlier versions of DOS. MAXI Disk will automatically detect if a disk is already formatted and can display the directory of such a disk to let you check it before reformatting if you wish. It will also detect some non-DOS disk formats, such as Macintosh 3.5" HD disks.

What will MAXI Disk do for me?

         Plenty! The extra space MAXI Disk gives you on each disk allows you to store more data on each disk. This lets you use fewer disks for hard drive backups. For example, backing up 20 megs of data from a hard disk using the DOS BACKUP command requires about 55 standard 360k floppies. Using the MAXI 420k format, you only need about 47. With 1.2 meg disks, you will need about 17 disks to backup the same 20 megs, while with the MAXI 1.4 meg format, you only need 14. The extra space also means you can store larger files on a floppy disk.   With the size of many software packages, it is virtually impossible to run them from a single 360k floppy and still have any space left over for data storage. With MAXI 420k disks, you get an extra 60k of space on each disk that can be used for your data storage. An extra 60k per 360k disk is 600k per box of 10!! This is like getting more than one and a half disks FREE in every box of floppies you buy. It doesn't take long for the savings to add up.

Are the extended capacity disks reliable?

         Absolutely! The MAXI system has been around since the early days of MS-DOS, through MAXI Form, FreeForm and the DOS version of MAXI Disk. The MAXI extended capacity disks are just as reliable as normal DOS disks. The data are recorded at precisely the same bit density on each track as normal DOS disks. The extra space is achieved by recovering some of the space that is 'wasted' by DOS with filler bytes. (There is so much filler in a DOS disk, that you can get an extra sector or two per track without sacrificing any reliability.) In fact, many other computers and operating systems (equipped with the same disk drives and using the same floppy disks as on PC type machines) have been using that extra space quite reliably for many years before PC/MS-DOS was even developed! We like to refer to this as the 'space that DOS forgot'. Even Microsoft has recognized this now with their new special DMF disk format used for software distribution.

MAXI Disk seems to be a 'free lunch'. Where's the catch?

As far as we know, there is no 'catch'! Besides, MAXI Disk is not really a 'free lunch' anyway. Think of it more like converting the unfinished attic in your house into extra living space. The basic structure has been in place since the house was built; it just wasn't fully or efficiently utilized.

Version History

Version 4w03:
- Initial release for Windows 3.x and Win'95.