DOS MASTER documentation

DOS MASTER is a system for putting DOS 3.3 partitions on ProDOS volumes such as a hard disk or a 3.5" disk. I have been using this system on my hard disk for over four years.

The system will support DOS 3.3 on up to 4 different slots and two drives/slot and up to 255 volumes/drive. On each slot you can have 560, 640, 800 or 1600 sector DOS volumes. These are not intermixable, but different slots can support different volume sizes. The large 1600 sector size uses 32 sectors/track and thus may be incompatible with some DOS utilities (eg., an unmodified FID will not work on such volumes [but the supplied FUD program will]). For this reason I personally prefer the 800 sector size. The 560 sector size is the standard size of a DOS 3.3 floppy disk, and hence would be the most compatible size to use, and 640 sectors emulates a 40 track floppy.

NOTICE

The DOS MASTER system is Copyrighted 1987-90 by Glen E. Bredon. All rights reserved.

This system is sold by the author for $25:

Glen E. Bredon
521 State Road
Princeton, NJ 08540

Other software:

ProSel-8 (program selector/disk utility package).....$40
ProSel-16 (IIgs hard disk management system).....$60
ProCMD (a set of added ProDOS BASIC added commands).....$25
Apple.Rx (software virus detector/protector).....$25

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ADVANTAGES OF THIS SYSTEM

(1) The system lives peacefully on any ProDOS device. It is compatible with all ProSel utilities. (In particular, Beach Comber will not harm the DOS partition.)

(2) The partition can easily be removed.

(3) Partitions can be on both a hard disk and a 3.5 disk and are compatible with one another as well as with standard DOS 3.3 floppies.

(4) The system uses no memory outside the standard DOS area. Thus it should be compatible with damn near everything.

(5) Supports (especially on a IIgs) a fast return to ProDOS without rebooting.

DISADVANTAGES OF THIS SYSTEM

The system patches over the DOS 3.3 formatter, so you cannot INIT a disk from it, or use a formatting function in any program that has such a function. You can, however, format floppy disks from the FUD program and can also copy volumes as well as files from that program.

SETTING UP THE SYSTEM

It will take some work to get the system set up the first time. Here are detailed steps to follow:

(1) Short descriptions of the files on the ProDOS portion of the supplied disk:

DOS.MASTER.DOC	(this doc file)
STARTUP	(prints the doc file)
MAKE.DOS	(sets up user parameters and makes the DOS.3.3 file)
DOS.MASTER	(a "template" used by MAKE.DOS)
DOS.INSTALL	(lays down the DOS partition on selected disks)
REVISE.DM	(a Basic program that allows modification of the DOS.3.3 program in case you change the hard disk slot. Also lets you see all the supported slots and volume data that you put into the DOS.3.3 file when you ran MAKE.DOS)
RDLINE	(an added ProDOS command used by MAKE.DOS)
TYPE	(an added ProDOS command used by STARTUP - These added commands are part of the ProCMD package of added ProDOS BASIC commands sold for $25.)

The DOS 3.3 portion of the disk contains the following DOS 3.3 programs. After setting DOS.MASTER up, you can BRUN FUD and use it to transfer these (and other) DOS 3.3 programs to your created DOS 3.3 partition.

HELLO	(a little HELLO for the DOS volumes; it just does a CATALOG and displays the number of free sectors on the current DOS volume)
FUD	(a DOS 3.3 filing utility fully compatible with the DOS MASTER.)
INTBASIC	(Integer BASIC)
LOAD INT	(a small BASIC program that will load Integer BASIC to the language card)

(2) Boot into ProDOS BASIC.SYSTEM.

Decide how many devices you are going to want supported, and put ProDOS disks in all of them. (There is no point supporting 5.25 devices - they are automatically supported by the system.) Decide how many DOS volumes per device, and how large you want them. (E.g., think about how much space they will take; for example ten 800 sector volumes is 4000 ProDOS blocks large. Do you really want that many?)

(3) Run the BASIC program called MAKE.DOS.

(a) Set the prefix to /DOS.MASTER by typing:

PREFIX /DOS.MASTER <RTN>

or to the ProDOS directory you copied the files to.

(b) The program will ask for a slot to support. Input 0 when done. (Press ESC to abort the whole thing.)

(c) The program will ask if you want the partition on drive 1, 2 or both (answer 1,2,3 respectively) drives on that slot. It will not let you put partitions on both drives if it finds different size volumes in that slot, because, for technical reasons, DOS Master must have those sizes equal.

(d) The program will tell you the maximum number of DOS 3.3 volumes that that slot will support, and ask for how many you want on drive 1.

(e) The program will ask the same question for drive 2 if you selected both drives for that slot.

(f) The program will then return to item (b). If you press "0" in step (b) then the program will continue to step (g):

(g) The program will now create and write the file DOS.3.3 on the disk it was run from. This is the only writing that this program does. It needs formatted disks in the supported devices for reading only, in order to check some parameters.

(4) Now you have the file DOS.3.3. This is the file that switches you to the DOS 3.3 partition whenever you execute it. It is a SYS type file, and can be selected from ProSel or any ProDOS launcher. Copy the file DOS.3.3 to anywhere on some ProDOS volume containing a DOS.Master partition. [See (6) for 3.5 inch boot disks.]

(5) However, you are not yet done setting everything up. You must "install" a DOS 3.3 directory on the disks you wish to put a DOS partition on. This is done by the DOS.INSTALL program. DOS.INSTALL must be run from the disk containing the DOS.3.3 file from step (3). To run it, type:

-DOS.INSTALL

This program will read the file DOS.3.3 for the parameters you set up in step (3). It will ask you for a slot and drive to put the DOS partition on. You must have a ProDOS FORMATTED disk in the appropriate drive.

The program will check this disk to see if it has room for the partition you have selected. If not, it will abort before doing anything. If so, it will proceed as follows: If the device is a 3.5 disk and you elected volume size 800 and 4 volumes on the disk, or size 1600 and 2 volumes on the disk then (since these DOS volumes will completely fill the disk leaving no ProDOS space) you will be asked if you want to leave space to make the disk "bootable". If so, this will lock some DOS tracks and release some corresponding ProDOS blocks to make room for a couple of ProDOS files [see (6)].

Then you are asked to press RTN to proceed or ESC to abort. If you press RTN, the program will write the DOS partition to the selected device.

(6) The DOS partition is now set up, and can be accessed by running the DOS.3.3 program. However, if you run that from a device NOT containing a partition, it will give an I/O error. This is harmless and you can access the device with a partition by typing CATALOG,S?,V? with the appropriate S and V parameters.

To make the partitioned disk bootable, copy (from ProDOS) the PRODOS (P8) file to the partitioned disk, and also copy the file DOS.3.3 from step (3) there. Then rename DOS.3.3 to DOS.3.3.SYSTEM or any name ending in ".SYSTEM". (Also rename P8 to PRODOS if it is not already called that.) The "bootable" option leaves just enough room, with a little extra, for these two ProDOS files. The 560 sector option, on 3.5" disks, already has sufficient ProDOS space left over from the partition for these files (this option has a maximum of 5 DOS volumes per 3.5" disk).

(7) At this step you can boot directly into the partitioned disk. However, you will get a FILE NOT FOUND error since the boot has looked for a file called HELLO and no such file is on the DOS partition. You can write one, or use the one provided with the DOS.Master disk:

[Note that the DOS 3.3 files on the supplied disk do not show on a PRODOS catalog, but will show when cataloged from DOS 3.3. Also remember to use the caps lock when working with DOS 3.3.] Then boot DOS 3.3 by executing the DOS.3.3 program. (Just type -DOS.3.3 <RTN> from ProDOS BASIC.SYSTEM. Ignore any error messages such as FILE NOT FOUND or I/O ERROR. If you see the DOS.MASTER title in the middle of the screen then the boot was successful and you are now in DOS 3.3.) Then run the filing program FUD on the DOS 3.3 portion of the floppy disk by typing BRUN FUD <RTN> and use FUD to copy itself, and any other DOS 3.3 programs you want, to the DOS partition. It is suggested that you at least put a HELLO program, such as the one supplied, on Volume 1 since DOS.MASTER boots by default into the first volume. You can boot into other volumes as described in step (8):

(8) Ignore this item if you do not use ProSel. (Better yet, get a copy.)

You can go directly from ProSel to any program on any of the DOS 3.3 volumes. For example, if FUD is on volume 2 of the DOS partition of the disk containing the DOS.3.3 ProDOS file, then you make an application specification such as:

```
Screen name:     FUD (DOS 3.3)
Prefix:          ?UTIL           (if DOS.3.3 is in UTIL)
Application:     DOS.3.3
Startup:         FUD;2B
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(The "2" in the startup specifies DOS volume 2 and the "B" tells DOS.MASTER that FUD is a B-type {binary} file.)

If there is no startup specification or DOS is booted by the BASIC command "-DOS.3.3" then it will attempt to boot into the same slot and drive that the DOS.3.3 program was in, and into volume 1 of the partition, and will attempt to run the BASIC program called HELLO.

If that slot/drive has no partition then an I/O error will result - this is harmless. If the partition exists but no HELLO program (or the specified startup program) exists on the booted DOS volume then a "FILE NOT FOUND" error will result - also harmless.

(9) If you change your hard disk slot, you can modify the DOS.MASTER setup by just running the REVISE.DM program. This and other modifications you may want to make do not require remaking of the DOS file. You can start over at step (3) with the DOS.3.3 file unlocked.

(10) If you want to remove the DOS partition and you have ProSel then just delete the DOS.3.3 and run the Mr.Fixit program in Fix mode and answer Yes when asked if you wish to free the unused blocks.

If you do not have ProSel then the partition can also be removed by running DOS.INSTALL. In this case, the DOS.3.3 file must be the one previously used to create the partition (if it was changed then use MAKE.DOS to put it back in the configuration used to make the partition, and then run DOS.INSTALL to remove the partition). After removing the partition with DOS.INSTALL you must remove, or modify with MAKE.DOS, the DOS.3.3 file. If you are using this provision to change the number of DOS volumes, remember that a second run of DOS.INSTALL will kill all files in the previous partition, so remember to copy the files to floppies first.

USING FUD

The FUD program is a file manipulation program that is fairly well self-documented. Specifying a volume of 0 will default to the presently logged DOS volume. The floppy formatter can format 5.25 and 3.5 inch floppy disks only, and is provided because this patched DOS has no INIT. Note, however that the format function formats a DATA disk (tracks 1 and 2 can be used by files) and does not put a DOS image on tracks 0,1,2. Thus such a disk is not bootable. If you want to produce a bootable disk, you should use

format, and then do an image copy of a bootable disk to the new disk, and then use the delete function to delete all the files. When using the formatter to format a 3.5 inch data disk, note that ALL volumes on the 3.5 disk will be formatted even though the program asks for a volume number! Also the number and size of the volumes will be the same as was specified when you ran MAKE.DOS.

The image copy function can copy any DOS volume to another of the same number of tracks and sectors (the program checks for this). The destination volume can have a different volume number than the source. This function can be used on floppies but is not limited to them. The copy program demands that the destination volume exists as a DOS volume; that is, it cannot format the destination. This is because of the size checking.

You can also run Applesoft programs or Binary programs (or EXEC text files) directly from FUD. In this mode the names of these types of files are displayed as in the catalog function, but you can then type the file name of the program you wish to run. Note that wild cards are accepted here, so that if you want to run a program called "VERY LONG FILE NAME 1987", then typing VERY= <RTN> will likely find it and run it (providing there are no other files starting with "VERY".

When you exit FUD, you can reenter by typing BYE. Of course, a few programs might conflict with this, but most Applesoft programs will not be any problem. You can even make BYE a DOS command in a program (PRINT CHR$(4)"BYE") and return to FUD directly from the program.

FUD supports a fast return to ProDOS (function "P") without rebooting. This is especially valuable on the IIgs as it is not necessary to go through a P16 boot to get back to ProDOS. This function is also supported on the 128K Apple //e or //c but there is a possibility of conflict with some DOS software on these machines, and so the return is sometimes defeated. If you have gone into DOS 3.3 by running some other program than FUD, then you must BRUN FUD to be able to use this fast return feature.

ABOUT THE DOS.MASTER DISK

The supplied disk can be accessed from both ProDOS and DOS 3.3. It is not a "kosher" disk, and you should not attempt to use any repair utilities on it. It can be copied by the ProSel volume copy program or with the image copy function of FUD. It will boot into ProDOS, but once you have booted into DOS 3.3 (from DOS.MASTER or by booting any real DOS 3.3 disk) you can access the DOS 3.3 files on it, and copy them with FUD to other DOS 3.3 volumes. This strange formatting is used only to make the duplication of the disk easier for me.

Please note that you will not see the DOS 3.3 files on this disk if you catalog it from ProDOS, and will not see the ProDOS files on it if you catalog it from DOS 3.3, but the files are there nevertheless.

ACCESSING FILES ON PARTITIONED DISKS

You CANNOT access files on a DOS.MASTER partition if you booted DOS 3.3 from a standard DOS 3.3 disk. You can only access the

files by running (whether directly or by setting it up as a PRODOS boot sequence) the DOS.3.3 file created by MAKE.DOS. Once that is done, you may use some DOS 3.3 utilities, but be warned that many such utilities are not written generally enough to work with DOS 3.3 volumes which are not standard floppy disks. I suggest that you stay away from most DOS 3.3 utilities and use FUD to copy files and volumes, etc.