Installing DOS & Unix on the Same Hard Drive

Here are instructions for installing DOS and Unix on the same hard drive. These procedures assume you are installing from scratch, with DOS being the first of the two installed.

Two choices for the DOS partition configuration are described here (Unix compatibility refers to the capability of mounting the primary DOS

A DOS 3.3 **IIC:11** (primary) partition and an optional DOS 5.0 ID:" (extended) partition.

With Unix prior to 3.2 v4.0, this is the only available option

2. A DOS 5.0 **IIC:11** (primary) partition. This is available only with Unix 3.2 v4.0 and later.

Note: If you plan to use VP/ix on this hard drive, and plan to access. This DOS partition, make sure it is not

an extended DOS partition (not larger than 32 MB), as VP/ix won't support extended DOS partitions.

There are other (quite severe) limitations to accessing this DOS partition under VP/ix as well. Please

refer to vpix.doc for more information.

Note: Only the first MS-DOS partition per hard disk is available to VP/ix (default for the first hard disk is as

drive D:). Hence, if you have a MS-DOS partition, it must be 32 MB or smaller, and that will be the

MS-DOS partition available to VP/ix.

You will need:

- DOS 3.3 primary partition: A DOS 3.3 bootable floppy containing FDISK & FORMAT
- A DOS 5.0 bootable floppy containing FDISK & FORMAT (& LABEL if wanted)
- All the normal stuff for Unix installation

ESDI & MFM:

The hard drive must be low-level formatted before proceeding. In the case of SCSI drives, this has already been done for you; with ESDI & MFM drives, however, you will need to do this step. See the "Hard Drive Installation" section, the paragraphs "Use of Speedstor to Format a Hard Disk" or "Use of BIOS to Format a Hard Disk" to accomplish this.

(all drive types:)

DOS 3.3 primary partition:

Boot the machine using the DOS 3.3 bootable floppy. You can use IVERI to make sure you are using DOS 3.3.

DOS 5.0 primary partition: Boot the machine using the DOS 5.0 bootable floppy. You can use 'VERI to make sure you are using DOS 5.0.

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A>fdisk                 (Start DOS's partition manager)

Enter choice:  4        (Display Partition Information)
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Press ESC ESC

Enter choice: 1 (Create DOS Partition)

Enter choice: 1 (Create Primary DOS Partition)

DOS 3.3 primary partition:

Maximum size & active? Y

DOS 5.0 primary partition:

Maximum size & active? N

Partition size (Enter the total number of MB to be used for the DOS partition)

Press ESC ESC

Enter choice 2 (Set active partition)

Enter partition 1

Press ESC ESC

Enter choice ESC

Insert DOS ... drive A: (Leave the same DOS floppy in the drive) (Press any key)

(The system will reboot)

A> format c: Is (Format the C: drive with the appropriate version of DOS)

If you are asked

Proceed with format (Y/N)? answer 11Y."

DOS 3.3 primary partition:

Insert the DOS 5.0 floppy in drive A:

A> CTRL-ALT-DEL (Reboot the system)

A> sys a: c: (Put the DOS 5.0 operating system on drive C:)

A> fdisk (Start DOS 5.0's partition manager)

Enter choice: 4 (Display Partition Information)

You should see the following:

Partition Status	Type	Volume	Label	MBytes	System	Usage
C:	1	A	PRI DOS	32	FAT16	?01

Press Esc ESC

Enter choice: 1 (Create DOS Partition or Logical DOS Drive)

Enter choice: 2 (Create Extended DOS Partition)

Enter partition size (Enter size to create the extended DOS partition. If 100 MB is to be used for DOS, this would be 68, since the primary partition is 32 MB.)

You should see the following:

PartitionStatus Type Volume Label MBytes System Usage

C: 1 A PRI DOS 32 FAT16 ?0-.

1 EXT DOS ?? UNKNOWN ?0-.

Press ESC

logical drive size RETURN (Use the size of the extended partition)

You should see the following:

Drv Volume Label Mbytes System Usage

D: ?? UNKNOWN 10006

Note: ID:" does not refer to physical hard drive I'D:" (the second hard drive), but refers to the second *logical* drive.

Press Esc ESC

Press Esc to exit FDISK ESC

Insert DOS ... drive A: (Leave the DOS 5.0 bootable floppy in the drive)

(Press any key)

(The system will reboot)

Note: Make sure you use the DOS 5.0 floppy.

A> format d: /u (Format the extended DOS partition unconditionally)

WARNING: ... Proceed? y

(The D: drive (extended DOS partition) will be "highlevel" formatted.)

Volume label Logical D **(**is not available)

Now you may give drive C: a volume label.

A: label c: (Prepare to label drive C:)

(All DOS primary partition types:)

Volume label MS-DOS-5 (Use the version of DOS you used to format the C: drive)

Now, boot DOS from the C: drive to make sure it will work.

Remove the A: floppy so the computer will boot from C:.

A> CTRL-ALT-DEL (Reboot the system)

You now should copy the files from the DOS 5.0 floppy to the C: drive.

C> mkdir dos (Make a directory for the utilities)

C> copy a:*.* c:\dos (Copy A:Is files into C:\DOS)

C> copy \dos\autoexec.bat C:\ (Copy a starter autoexec.bat onto C: for booting)

You are now ready to install Unix. Please do so, noting the following exceptions:

- Be sure to follow the instructions under "DOS partition (abnormal)," as the normal instructions for installing Unix will attempt to use the entire disk for Unix

When you are through installing the Unix operating system, perform the following:

- Perform Imkdev dos' to allow the "dos" commands to operate on the DOS partition
- Make a /msdos directory so that Idosmount, has a place to mount the DOS partition

When booting the system, at the "Boot:" prompt, you may type dos to boot under DOS, or RETURN to boot under Unix.

Wyse 150 Won't Power on Properly:

If you turn on a Wyse 150 terminal and the bell sounds with a code appearing at the bottom of the screen, please do the following:

If an A, a, b, C, c, d, El F, K, R, W, X, or Y appears, press SELECT to exit the self test.

If the letter is **11K11** and the problem persists:

- Turn the power off
- Hold down the **11G11** key
- Turn the power on
- You will now need to re-program the terminal. This is described in the "Terminal Configuration" section.

If the error persists, or if the code is 0, 1, 2, or P, the terminal needs to be fixed.

Adding Swap Space:

When you increase the amount of memory on an existing system, you should increase the swap space so that future PANICs don't trash the root or mounted file systems when the system tries to dump to the swap device. The swap space should be at least as great as the memory in the system.

Here are the steps to increasing the swap space. The steps here assume you want to donate part of the mounted (/work) file system (/dev/u) to the new swap device (/dev/swap2).

- Back up everything in the file system and verify the backup tapes o Go into single-user mode
- Take from the mounted file system and give it to the new swap space:

Note: On SCO UNIX 3.2 v4.0, don't use any arguments for Idivvy,I with the exception of possibly specifying the HD device name.

divvy -b 1 -c 1 -m

(Enter Unix's partition divider)

Write down the mounted file system's (u1s) beginning and ending blocks.

Enter your choice n (Name or rename a division)

Which division? (Use the next "NOT USED" division, probably 3)

what ... call it? swap2

Note: This division's type will probably remain "NOT USED," but if you bring up Idivvy, again later it will probably be changed to "NON FS.11

Enter your choice s (Start a division on a diff. block)

Which division? (Use the same new division number)

Starting block number (Use the mounted file system's starting block number)

Enter your choice e (End a division on a different block)

Which division? (Use the same new division number)

Starting block number (Calculate as follows:

beg. block + Ilk"s of swap to add – 1 For example, if you are adding 16 MB of memory and are therefore increasing swap space by 16 MB, and you are starting swap2 at block 86000, it would be 86000+ 16000- 1 or 101999.

Enter your choice s (Start a division on a diff. block)

Which division? (Use the division you took blocks from, probably 2)

Starting block number (Use swap2ls ending block number + 1. In this example, it would be 102000)

You should now have a table similar to the following:

Name	Type	New FS	#	First Block	Last Block
root	AFS	no	0	16000	85999
swap	NON FS	no	1	0	15999
u	AFS	no	2	102000	609168
swap2	NOT USED	no	3	86000	101999
	NOT USED	no	4	-	-
	NOT USED	no	5	-	-
recover	NON FS	no	6	609169	629458
d1057all	WHOLE DISK	no	7	0	636063

These should probably be the only lines changed

enter your choice q (Quit)

enter your choice i (Install the division set-up shown)

It will say: Making file systems

Now the mounted file system needs to be recreated so that lost+found will be recreated in that directory:

mkdev fs

Select 2 (Remove a new filesystem)

Enter a device name /dev/u

mkdev fs

Select 1 (Add a new file system to the system)

Enter a device name /dev/u

Enter a directory name /work

Select an option:…… 1 (Always mount /dev/u)

Allow users to mount?…….. y

- You may go to multi-user mode and begin restoring the file system data from tape now
- Create the file /etc/rc2.d/SO2MORESWAP with the following contents:

Note: This assumes you are adding 16 MB of swap space. Substitute 2 * the number of blocks in swap2 you used in Idivvy, above for the last argument in the first line below.

Note: Do *not* exceed 2 times the number of blocks given swap2 within Idivvy, for the last argument on the

first line below. If you do, you risk trashing valid data on the adjacent division to swap2!

swap -a /dev/swap2 0 32000 swap -1

The swap -a, line adds the number of 512-KB blocks specified by the last argument in that line to the available swap space beginning with the oth block within /dev/swap2.

The swap -11 line displays the status of swap space. This indicates while going multi-user that swap space has been changed.

Make /etc/rc2.d/S02MORESWAP executable Pchmod +x /etc/rc2.d/SO2MORESWAP11)