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AppleShare PC: Using with Extended Memory (11/94)

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TOPIC -----

I want to load parts of PhoneNet Talk software into extended memory. I also want to load AppleShare Print Server and File Server into the top 3MB of expanded memory on a 4MB 386 machine. I'll be running PFS FirstChoice and the QEMM-386 utility.

Can I do this? How?

DISCUSSION -----

Yes, most of AppleShare PC can be loaded into a PC's "high memory" (conventional memory is the range from 0 to 640K, high memory is the range between 640K and 1024K). High memory is generally used by the PC BIOS, expansion cards, video memory, and other system resources. Very few PCs use their entire address range for such purposes. Most machines have space available that can be mapped to extended memory and used to load user software, such as drivers and TSR (Terminate and Stay Resident) utilities.

Unfortunately, DOS doesn't have a standard way to manage high memory ranges for user programs. It also can't find available ranges within high memory. Using this space means that programs sharing the same memory space may begin to write over each other resulting in unpredictable crashes, freezes, and generally weird behavior.

The QEMM-386 utility addresses this problem by providing extended, expanded, and high memory management functions. Extended and expanded memory is beyond the scope of this discussion and is somewhat irrelevant to your problem. What you should be concerned about is high memory.

QEMM-386 maps out available high memory ranges. Once this is done, QEMM-386 can then begin to "LOADHI" specific software, usually drivers and TSR utilities.

This whole process is a bit involved but is documented well in the QEMM-386 manuals. We strongly recommend that you read it. Below is a rough outline of the procedure. This general procedure must adapt to fit the needs of the specific hardware and software you're using.

- 1) Install AppleShare PC, and confirm it functions satisfactorily, allowing it to load from the AUTOEXEC.BAT file.
- 2) Perform a basic install of QEMM-386. Modify its line in the CONFIG.SYS file, enabling its "ON" option. Reboot. QEMM-386 and AppleShare PC should both load.
- 3) Exercise the installed hardware, meaning format floppy disks, print something, send something through each COM port, and so forth. The idea is to access memory ranges that may be associated with the PC hardware.
- 4) Without rebooting, use the QEMM analysis feature to determine which high memory ranges are available and which are already in use by the PC.
- 5) Modify the CONFIG.SYS line for QEMM-386 to INCLUDE and EXCLUDE the appropriate memory ranges discovered in the previous step. Also, remove the ON option you added in step 2. Reboot.
- 6) Use the QEMM-386 Optimize program to find which parts of the system and AppleShare PC it can load into the new high memory. This is a fairly automated process, but it requires three reboots. When complete, the Optimize program should indicate how much conventional memory was saved by loading software into high memory instead of conventional memory.
- 7) Confirm that the MINSES.EXE program is not one of those that is loaded into high memory. If it is, change it by removing the reference to LOADHI that loaded it. MINSES is a required part of the AppleShare PC software, but will cause problems if loaded into high memory. (MINSES and REDIR were both written by Microsoft, and assist in directing standard DOS commands to network devices.)

This is a very short description of the process, but it should give you a general idea of what to do. Again, we recommend reading the QEMM-386 manual for exact details. In addition to installation, the manual covers the different capabilities and uses for each PC memory type.

Additional information can be obtained from Farallon Computing, Inc.

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