TO: Distribution

DATE: 7 September 1990

FROM: Sue Nagcotta

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DEADLINE FOR INPUT:

End of day on Tuesday, September 11th

RE: SECOND DRAFT, DR DOS TECHNICAL Q & A FOR DISTRIBUTORS AND HOUSE ACCOUNTS

PURPOSE:

The "Technical Questions and Answers for Distributors" is designed to provide distributors and house accounts with specific technical information which may not be covered in the documentation, or which typical users tend to overlook. Calls which can be resolved at the distributor level are calls which our own staff will not need to handle.

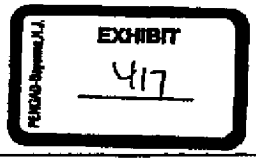
This document is intended primarily for use in the U.S. retail distribution channel. A copy will be sent on disk to all field offices when complete so that, if desired, it may be modified for local use.

SCOPE:

The document must be succinct, accurate, and easy to use. It must provide real solutions to common and significant problems. Product functionality, capabilities, and possible conflicts must be described accurately, however it is critical to avoid any suggestion that the product is difficult to use or support.

STRUCTURE:

As much as possible, questions should follow a natural sequence. Reference is made to the user documentation when pertinent. Each question has been assigned a number for reference during review.



FIRST DRAFT:

The first draft was reviewed by technical and marketing personnel and changes made based on their input. A few questions were felt to affect only a tiny percentage of the user base and have been removed entirely.

FEEDBACK:

Please provide input in written form as rapidly as possible, by end of day on Tuesday September 11th at the latest. Feel free to make suggestions for improving not only the technical content of the Q and A's, but also their sequence and wording.

DR DOS 5.0 - TECHNICAL Q & A FOR DISTRIBUTORS

The following information is a supplement to the DR DOS 5.0 Users Guide and DR DOS 5.0 Release Notes. It is intended to cover the questions most commonly asked by DR DOS 5.0 end-users. These questions and answers are designed to be used by distributor staff only, and should not be sent to end-users or dealers. The information in this leaflet cannot take the place of the documentation, and of a good working knowledge of DR DOS 5.0 gained through the actual use of the product.

Q1: How does DR DOS 5.0 compare with other DOS operating systems?

A: DR DOS 5.0 provides all of the functionality and application compatibility of DOS 3.31, and many of the features of DOS 4.01, including support for disk partitions greater than 32 Mbytes in size. DR DOS 5.0 maintains a higher level of application support and requires less memory than DOS 4.01, while offering advanced features such as sophisticated memory management, on-line help, command line history recall, menu-driven installation and configuration, full screen text editor, disk cache, and file transfer utilities. Since MS DOS 5.0 has not yet been released, it is not possible for us to compare it with DR DOS 5.0.

Q2: How much memory does DR DOS require?

A: DR DOS 5.0 provides a variety of features with differing memory requirements. The operating system itself takes approximately 75 Kbytes, and will function happily on a 256 Kbyte computer. ViewMAX and the menu-driven installation and setup utilities require machines with a minimum of 512 Kbytes of RAM. On 286 and higher processors, the operating system kernel can be moved from the conventional memory area, providing 620 Kbytes or more for application processing. To take full advantage of MemoryMAX features, the computer should have at least one Mbyte of memory and a 286, 386, 386sx, or 486 processor.

Q3: Does DR DOS 5.0 require any special installation steps?

A: DR DOS is designed for easy installation on either fixed or floppy diskettes. The menu-driven INSTALL program requires 512 Kbytes of memory (instructions are available through Digital Research Technical Support for the rare user with a machine having less than 512 Kbytes). INSTALL checks the type of processor and graphics card in the computer, then displays menus which help you tailor the system to take best advantage of your hardware. On-line help is available throughout the installation.

Many super high res graphics cards and network adapters use upper memory which is also accessed by MemoryMAX drivers. It may be necessary to use the /EXCLUDE option in EMM386.SYS or HIDOS.SYS to exclude the range of memory used by these cards. Detailed information on installation can be found in the DR DOS 5.0 User Guide and the DR DOS 5.0 Release Notes.

Q4: Do I need to re-format my hard drive?

A: If your hard drive is currently running a DOS operating system, it is not necessary to re-format before installing DR DOS 5.0. During installation, DR DOS replaces the operating system files and creates a separate directory for DR DOS. No other changes will be made.

A new hard drive may need to be prepared according to the hard drive manufacturer's instructions. If the instructions call for the use of DEBUG, use the DR DOS debugger SID instead.

Q5: Will DR DOS run all my DOS software?

A: DR DOS 5.0 is designed to run applications developed for DOS-based PCs without difficulty. DR DOS responds to internal program instructions (interrupts and DOS calls) in the same way as DOS. Some software asks the operating system for a DOS version number; for compatibility, DR DOS 5.0 responds with a DOS 3.31 version.

Q6: Do any applications require special configuration in order to run under DR DOS 5.0?

A: Autocad 10 is the only application known to require special configuration. It should be installed using the settings for DOS 4.01, as documented in the Autocad manual (FCBS=48,8). See also question 12, "When should the NEMMAX command be used?"

NOTE: We received a user report today that Software Carousal will run fine under DR DOS 5.0 if their default configuration file is erased and re-created under DR DOS. This information will be included if verified.

Q7: Is DR DOS 5.0 network compatible?

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A: DR DOS 5.0 is fully compatible with Novell NetWare and with networks based on MS-NET. Special network drivers are typically not needed. For example, Novell NetWare is run with NET3.

There are many networks in the marketplace which have successfully been used with DR DOS 5.0. Some which have been certified by outside testing include: Novell NetWare and NetWare 386, MS-NET, 3Con 3+ Open, 3Com 3+ Share, DCA 10Net, Etherlink II, Etherlink Plus, TOPS, LANtastic 3.0, and Banyan Vines. IBM PC-LAN will run with DR DOS 5.0 however printing is impaired; this situation appears under other DOS 3.31 operating systems as well.

If MemoryMAX features are loaded, most network device drivers can be loaded into upper memory, providing extra memory for network applications. It may be necessary to use the /Exclude option to exclude areas of memory occupied by network adapter cards.

A wide variety of network software has been tested, including dBase III and IV, Lotus 1-2-3 version 2.2 and 3.0, WordPerfect 5.1, Framework III LAN, Paradox 3.0 and 3.01, and Windows 3. See also question 12, "When should the MEMMAX command be used?"

Q8: What is MemoryMAX?

A: MemoryMAX is the term used to describe the memory management features provided by DR DOS. These include the device drivers EMM386.SYS, HIDOS.SYS, and EMMXMA.SYS, and the commands HILOAD, HIINSTALL, HIDEVICE, HIDOS, MEM, and MEMMAX. These features are described in detail in Sections 8 and 9 of the DR DOS 5.0 Users Guide and in the DR DOS 5.0 Release Notes. Appendix C contains a definition of the types of RAM memory and how they are utilized by DR DOS.

Q9: How do the MemoryMAX commands work together on my computer?

A: This question is best answered after determining the customer's hardware platform. In all cases, MemoryMAX features require at least one Mbyte of memory.

* MemoryMAX on a 386, 386sx, or 486 computer:

EMM386.SYS is typically used to move the operating system kernel out of conventional memory, to relocate the system data areas (such as buffers) to upper memory, to provide LIM memory to programs which utilize it, and to move TSRs and device drivers into upper memory. If a computer is equipped with a monochrome, Hercules, or CGA graphics card, then conventional memory can be increased by 64 Kbytes by using the /VIDEO option in EMM386.SYS.

Some applications require that a third party memory manager be loaded instead of EMM386.SYS. When a memory manager (such as QEMM 5.0) supports upper memory and is XMS compatible, HIDOS.SYS can be used to load the operating system kernel into available upper or high memory.

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* MemoryMAX on a 286 computer with Chips and Technologies NeAT, NeAT-ax, LeAP, or LeAP-ax chipsets:

HIDOS.SYS can be used to relocate the operating system to upper or high memory, and to load buffers, device drivers, and TSRs into upper memory. Some applications require that a third party memory manager be loaded instead of HIDOS.SYS. When a memory manager supports upper memory and is XMS compatible, and upper or high memory is available, HIDOS.SYS can be used to relocate the operating system kernel.

HIDOS, HIDEVICE, HIINSTALL, and HILOAD can be used when upper memory has been initialized with HIDOS.SYS These features will not work with third party memory managers.

* MemoryMAX on a 286 computer without the Chips and Technologies
* chipsets:

HIDOS.SYS can move the operating system to high memory, providing approximately 37 Kbytes of additional memory to applications.

* MemoryMAX on an IBM PS/2 computer equipped with IBM XMA memory:

EMMXMA.SYS is used to provide LIM expanded memory to applications which take advantage of it. Additionally, the HIDOS.SYS driver can be loaded after EMMXMA.SYS, to move the operating system to high memory. This provides approximately 37 Kbytes of additional memory to applications.

Q10: How can I become more familiar with MemoryMAX?

A: First, read the descriptions of each MemoryMAX feature in Sections 8 and 9 of the DR DOS 5.0 Users Guide, also Appendix C in the same manual. Then read the DR DOS 5.0 Release Notes and question # 9 above. Now that you have a basic understanding of what MemoryMAX is and does, you can begin experimenting with each feature a step at a time.

If you have a 386 computer, a good place to start is by enabling upper memory without moving the operating system or buffers and without creating a LIM page frame. Place the lines HIDOS=OFF and DEVICE=C:\DRDOS\EMM386.SYS /F=none /X=auto /B=none /R=none in the CONFIG.SYS file. Next run the command MEM /A /F to see what the upper memory area looks like. Notice that the DR DOS kernel is still in lower memory, and most of the upper memory area is free. Now begin experimenting with the EMM386.SYS switches one at a time, each time running MEM /A /F to see how the upper memory area is used. For example, you might use DEVICE=C:\DRDOS\EMM386.SYS /F=auto /X=auto /B=none /R=none (this creates a LIM page frame but does not move the DR DOS kernel). Watch for the results of HIDOS=ON or OFF, using different addresses in /F and /B, and /R=ON or OFF.

This type of experimentation can be somewhat time consuming but

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will give you an excellent understanding of how MemoryMAX uses upper and high memory.

Q11: Does MemoryMAX directly support Windows 3 without using Microsoft's HIMEM.SYS?

NOTE: This question has been heavily answered by users since Quarterdeck and Qualitas have announced they are working on such support.

A: To be provided by Product Marketing. If an answer cannot be supplied during this second draft, the question will be omitted.

Q12: When should the MEMMAX command be used?

A: The MEMMAX command is described in the DR DOS 5.0 Release Notes. MEMMAX is used to temporarily lock and release two significant areas of memory: the first 64 Kbytes of conventional (lower) memory, and the area between 640 and 1024 Kbytes (upper memory). MEMMAX was designed to resolve conflicts that can arise when applications become confused finding memory in these areas, which are normally unavailable under other DOS operating systems.

MEMMAX -U is required only when upper memory has been initialized by EMM386.SYS or HIDOS.SYS on 286 computers which have the Chips and Technology NeAT or LeAP chipsets. Applications known to require this command are:

Windows 3.0 in real mode
Ventura Professional 2.0
WordPerfect Office Shell
WordPerfect Library Shell
DesqView (if run with EMM386.SYS)

MEMMAX -L is required only when EMM386.SYS or HIDOS.SYS have been used to move the operating system kernel to FFFF. Applications known to require this command are:

GEM DeskTop 3.x GEMSETUP utility
NOVELL NetWare utilities such as LOGON, PRINTDEF, MAKEUSER, etc, ONLY if both NET3 and IPX.COM were loaded high.
Test Drive (computer game)

Note that MEMMAX need only be run temporarily while the affected application or utility is being used. For example, on Novell NetWare MEMMAX -L would be run before LOGON and any utilities shipped with NetWare, however lower memory should be released prior to running any applications across the network, by using the command MEMMAX +L. These steps ensure the proper functioning of NetWare utilities under DR DOS 5.0, while still providing maximum memory for applications run across the network.

Q13: I tried to use the HILOAD command, but it didn't work. Why not?

A: There are several possibilities which should be ruled out one

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by one. First, HILOAD will function only on appropriate hardware using EMM386.SYS or HIDOS.SYS (see question #9). Second, there may not be enough memory available for the TSR which you wish to HILOAD. Run the MEM utility to determine how much upper memory is available. Finally, upper memory may have been locked with the MEMMAX -U command before the HILOAD command was given. Be sure that upper memory is unlocked using the command MEMMAX +U before using HILOAD.

Q14: Why does my program act differently under DR DOS?

A: Several factors can cause a program to behave differently under DR DOS 5.0 than under another DOS operating system. DR DOS 5.0 provides a great deal of functionality which other DOS operating systems do not offer. Most differences are the natural result of this additional functionality. For example, users frequently report that their programs run faster under DR DOS, in part because MemoryMAX makes extra memory available to applications, and because of the DR DOS 5.0 CACHE utility.

One little-known fact is that some programs are very dependent on having a specific version of DOS installed. A program which runs fine on MS DOS 3.30 may fail under DOS 4.01, or may require a special configuration to run properly.

Programs which provide their own extended or expanded memory management may get confused if another memory manager, such as MemoryMAX, is activated. DR DOS 5.0 offers a special command, MEMMAX, to make certain areas of memory look the way they would if MemoryMAX had not been loaded (see question 10, "When should the MEMMAX command be used?").

Older versions of software, especially disk utilities, may not recognize hard drive partitions of larger than 32 megabytes. This can usually be corrected by obtaining an update from the disk utility vendor.

Virus detection programs frequently check the size or checksum of the primary operating system files. If such a program expects only MS or PC DOS, when run under DR DOS it may inaccurately report that the system has been corrupted.

A very small number of applications rely on the existence of specific identical sections of DOS operating system code (for example, if the program actually applies a patch to DOS itself). These "badly behaved" programs typically will fail because DR DOS program code is not identical to other DOS code.

Q15: Why won't my mouse work with ViewMAX?

A: Use the DR DOS 5.0 SETUP utility to check the mouse selection for ViewMAX and change it if necessary. If you are using the mouse driver which came with your mouse, select the BUS mouse option. Be sure you are not loading two different mouse drivers, for example MOUSE.SYS in CONFIG.SYS and a separate MOUSE.COM in


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AUTOEXEC.BAT or a batch file used to start your mouse-aware application. If you use several configuration files which use different mouse drivers, a warm boot of the computer may be insufficient to clear the mouse settings, so you may need to power off the computer before selecting a new configuration file.

Q16: What can I do to resolve possible memory conflicts?

A: First, try to isolate the actual cause of the problem. Test each device driver and application individually to ensure that they work properly when loaded by themselves. Carefully record the system configuration and sequence of steps leading to the point at which a conflict is detected.

Carefully review the users documentation provided with any third party memory managers or applications in use. Determine if special syntax, command line options, or configuration is required.

Review the contents of your CONFIG.SYS and AUTOEXEC.BAT files to be sure you are using the best loading sequence and syntax for all device drivers and commands. Check to be sure that MEMMAX commands are logically placed (ie, MEMMAX -U should come AFTER any HILOAD commands). Make sure you are not attempting to load conflicting memory managers or command line options.

Some device drivers require specific memory addresses to be free; use the /EXCLUDE option to specifically exclude these areas from use in EMM386.SYS and HIDOS.SYS.

Certain applications come with multiple device drivers which must be loaded adjacent to one another in memory and may become confused if separated. It may not be possible to use HIDEVICE with these drivers.

If the problem still cannot be resolved, make a printout of the following: CONFIG.SYS and any alternate configuration files, AUTOEXEC.BAT, and MEM /A. Write a detailed description of the conflict; be sure to provide the name and version number of any device driver or application you suspect is involved. Send these documents to your technical support contact for further analysis.


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