

Memory that a Windows program has requested and received from Windows.

Average Compression Ratio gives the ratio of the size of data before compression to the size of data after compression. This is an average figure obtained from the data compression that has occurred since this Windows session began. The average compression ratio will probably change as you do more work in Windows. This statistic will be available only if MagnaRAM is active.

The executable code of a Windows program: an .EXE file, a .DLL file, or a driver.



Quarterdeck QEMM

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640K

The **640K Windows** area shows the amount of conventional memory available to a Windows program, again graphically represented as a portion of 640K. A Windows program has less conventional memory available to it than does a DOS program: its memory space includes Windows DLL files, task databases, and other Windows overhead as well as all the programs that use up conventional memory for a DOS program.

The **640K DOS** area shows the amount of conventional memory (memory below 640K) available to a DOS program within Windows. This figure is graphically represented as a portion of the full 640K of conventional memory. Conventional memory is used up by DOS, by TSRs and drivers loaded before Windows, and by Windows' kernel.

[640K Windows Details](#)

[640K DOS Details](#)

Quarterdeck QEMM
Online Help File

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640K DOS Details

The **640K DOS Details** panel shows you the memory available to you when you open a DOS Prompt window in Windows. The screen explains how your 640k of conventional memory is being used by listing each program loaded into memory, its memory address (location), and size.

A Windows program's data segments other than the default data segment.

The default data and stack segments of a Windows program.

Memory available from Windows.



GDI Heap Details

The **GDI Details** screen tells you more than you probably want to know about the contents of the GDI system resources heap, which Windows uses to store data related to graphic devices like icons, window borders, and so on. The contents of the GDI heap are presented on this screen in two different sections, each with its own pie graph and statistics.

The **Bytes by Resource Type** section lists the different types of graphic devices that are stored in the GDI heap, and tells how many bytes are used up by each device, as well as the total number of bytes in the heap. A pie graph illustrates how the GDI heap is divided among the following device categories.

Normal (Devices reserved for Windows' internal use.)

Free (Unused memory in the GDI heap.)

Pen (Pen devices.)

Brush (Brush devices.)

Font (Font headers.)

Palette (Color palettes.)

Bitmap (Bitmap [image] headers.)

Region (Regions.)

DC (Device contexts, data structures needed by Windows programs in order to use graphic devices.)

Disabled DC (Device contexts for Windows' internal use only.)

Meta DC (Metafile device contexts.)

Metafile (Metafile headers.)

The **Bytes by Memory Type** section tells how much memory in the GDI heap is free for use, how much is in use and fixed at a particular address in memory, and how much is in use but can be moved to different addresses. The total number of bytes in the heap is also listed, and a pie graph illustrates how the heap is divided among the three categories.

GDI Resource

The **GDI Resource** area gives you the percentage of available memory in the GDI system resources heap, which is used for data related to drawing graphics devices like icons, window borders, and so on.

If QEMM's **Resource Manager** feature is active, the number given reflects the extra effective memory created by its use. Programs may fail to run or your system may become unstable if this figure is too low.

[GDI Heap Details](#)

Help on Help



General Information: For information on using the Windows online help system, press **F1** at any time.



Secondary windows: The small graphic image of a printer and clipboard to the left of this paragraph appears in the upper left corner of most secondary windows. When a topic in a secondary window is accompanied by this graphic image, you can print the topic by clicking on the printer or copy the topic to the Windows clipboard by clicking on the clipboard.

Linear Memory Free counts all the memory addresses that Windows still has available to give out to programs. Windows may not have enough physical or virtual memory to go with all these memory addresses - linear memory is just a numbering system that measures the capacity for memory allocation, not a measure of actual available memory. The size of linear memory is fixed at two gigabytes in Windows 95; in Windows 3.1, it depends on the PAGEOVERCOMMIT statement in SYSTEM.INI.

Linear Memory Used indicates all of the memory that has been allocated from Windows' memory manager, which includes most of the memory that Windows itself has taken and all of the memory that Windows programs have taken. This figure is a good measure of the memory demand on the system - it does not reflect MagnaRAM's behind-the-scenes data compression (if MagnaRAM is active), just the amount of memory that programs in Windows have asked for and gotten.



Memory Details

Linear Memory Used

Linear Memory Free

Physical RAM Used

Physical RAM Free

Total Physical RAM Compressed

Virtual Memory Used

Virtual Memory Free

Total Virtual Memory Compressed

Total Memory Compressed

Average Compression Ratio

Swap File Hits

Swap File Hits Avoided

Swap File Time Saved

A module database, used by Windows to keep track of where programs are loaded.

Overview

The **Quarterdeck QEMM** main screen uses graphical displays to give you a quick overview of memory usage on your system. The different graphs on this screen provide information on conventional memory (both for DOS programs and Windows programs), physical memory, available memory, User system resources, and GDI system resources. If you want more detailed information on any of these topics, click on the **Details** button for that topic.

Along the right side of the Quarterdeck QEMM screen are buttons from which you can launch Manifest, Optimize, QEMM Setup, or this online help file.

Physical Memory

The **Physical Memory** area depicts the use of the system's physical memory (installed RAM, including conventional and extended memory). If you are using Quarterdeck's MagnaRAM feature, the bar graph in this area reflects how MagnaRAM's data compression increases the amount of code and data that can fit in physical memory.

The blue area of the bar graph shows the amount of physical memory used on the system. This amount has been adjusted to reflect MagnaRAM's compression of memory, if MagnaRAM is active.

The gray area shows the remaining physical memory on the system. This amount has been adjusted to reflect MagnaRAM's compression of memory, if MagnaRAM is active.

At the top of the graph is a number that represents the amount of effective physical memory on your system. If MagnaRAM is active, this figure is a projection based on how well MagnaRAM has been able to compress memory in this Windows session.

Memory Details

Physical RAM Free is all the physical memory (installed RAM chips) on the system that is currently unused. The numbers for Physical RAM Free and Physical RAM Used should always add up to the same number: the total amount of usable physical RAM on your system.

Physical RAM Used is all the physical memory (installed RAM chips) on the system that is currently used: by programs running before Windows, Windows itself, MagnaRAM (if it is active), and programs running in Windows.

A structure that Windows will place in its system resources heaps to manage program windows.

Swap File Hits counts the number of times that Windows has written out data to its swap file during this Windows session. This figure is generally lower than it would be if MagnaRAM were not storing data in its RAM buffer and compressing it. This statistic will be available only if MagnaRAM is active.

Swap File Hits Avoided is the difference between the number of times that Windows tried to write data to its swap file during this Windows session and the number of times that data actually reached the swap file. MagnaRAM avoids many swaps to disk by storing data in its RAM buffer and by compressing it so that more data fits in faster RAM. This statistic will be available only if MagnaRAM is active.

Swap File Time Saved is an approximation, in hours, minutes, and seconds, of the additional time that Windows would have spent writing data to its swap file if MagnaRAM had not stored and compressed swapped-out data in its RAM buffer. In order to calculate this figure, MagnaRAM clocks the amount of time that it takes on your system to write a page of memory to your hard disk, and multiplies it by the Swap File Hits Avoided figure. This figure does not reflect the additional swaps that Windows must make because of MagnaRAM's RAM buffer, which takes up space and forces earlier swapping. This statistic will be available only if MagnaRAM is active.

A Windows task database (TDB), used by Windows to keep track of Windows programs.

Total Memory

The **Total Memory** area gives you statistics on the sum of the physical memory (installed RAM chips) and virtual memory (hard disk space that Windows uses as if it were extra RAM) available in Windows. If the MagnaRAM feature is active, total memory is effectively increased by MagnaRAM's data compression.

The blue area of the bar graph shows the amount of physical and virtual memory used on the system. This amount has been adjusted to reflect MagnaRAM's compression of memory, if MagnaRAM is active.

The gray area shows the remaining physical and virtual memory on the system. This amount has been adjusted to reflect MagnaRAM's compression of memory, if MagnaRAM is active.

At the top of the graph is a number that represents the total amount of effective available memory on your system. If MagnaRAM is active, this figure is a projection based on how well MagnaRAM has been able to compress memory in this Windows session.

[Memory Details](#)

Total Memory Compressed tells how much memory is represented by compressed data in the MagnaRAM RAM buffer and in the Windows swap file. Total Memory Compressed is the sum of Total Physical RAM Compressed and Total Virtual Memory Compressed. It measures the size of the data before compression, not the amount of space that the data currently occupies. This statistic will be available only if MagnaRAM is active.

Total Physical RAM Compressed tells how much memory is represented by compressed data in MagnaRAM's RAM buffer. For instance, if the MagnaRAM RAM buffer contains 600K of compressed data, and if the data was compressed at a 3:1 ratio, then the value of Total Physical RAM Compressed will be 1800K. This statistic will be available only if MagnaRAM is active.

Total Virtual Memory Compressed tells how much memory is represented by compressed data in the Windows swap file. For instance, if the swap file contains 5000K of compressed data, and if the data was compressed at a 2:1 ratio, then the value of Total Virtual Memory Compressed will be 10000K. This statistic will be available only if MagnaRAM is active.



User Heap Details

The **User Heap Details** screen gives you status information about the contents of the User system resources heaps, which Windows uses to keep track of the size and location of windows, how and when they respond to keys or mouse clicks, and other window information.

The fields at the top of the screen tell how much memory in the User heaps is free for use, how much is in use and fixed at a particular address in memory, and how much is in use but can be moved to different addresses.

The total number of bytes in the heaps is also listed.

A pie graph illustrates how the heaps are divided among the three categories.

User Resource

The **User Resource** area gives a graphical representation of the percentage of available memory in the User system resources heaps, which are used to keep track of the size and location of windows, how and when they respond to keys or mouse clicks, and other window information.

If system resources are too low, programs may fail to open, or the system may become unstable. The percentage of free memory shown reflects the additional memory created by QEMM's **Resource Manager** feature, if you are using it.

[User Heap Details](#)

Virtual Memory Free is all the space in the Windows swap file that is currently unused. The numbers for Virtual Memory Used and Virtual Memory Free should always add up to the same number: the size of the Windows swap file.

Virtual Memory Used is all the space on the hard disk that is currently used to store swapped-out data. This value represents the actual hard disk space used, regardless of whether the data on the disk is compressed by MagnaRAM (if it is active).



640K Windows Details

The **640K Windows Details** screen contains a pie graph of the part of conventional memory that is under the control of Windows' memory manager, broken down into categories that show the status of the memory according to Windows. This graph does not show the parts of memory that are already used before Windows programs can load: DOS, TSRs, drivers, and the Windows kernel. Each color on the map is coded to one of the categories listed on the right side of the screen.

The categories of memory use on this screen are:

Allocated

Task

Dgroup

Resource

Data

Module

Code

Free

