Cache86™ for Windows and DOS Index

General Topics

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NOTE: In this help file, the term "Windows 3.xx" refers to Windows 3.xx and Windows for Workgroups 3.xx.   Windows 95 refers to Windows 4.xx.

As always, we welcome any questions or suggestions about our software.   We know you will enjoy using this new version of Cache86 for Windows and DOS.   Let us know if we can help you.

The Aldridge Company

The Aldridge Company

2500 CityWest Blvd.   Suite 575
Houston TX   77042

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Cache86 for Windows and DOS

This setup program installs Cache86 for Windows and DOS and its associated files onto your hard disk. You will be given recommendations for settings and offered the opportunity to change defaults.

A line calling Cache86 will then be placed in your AUTOEXEC.BAT file so that it loads when your computer boots.

If AUTOEXEC.BAT or CONFIG.SYS are modified, a backup of the original file is placed in a file named AUTOEXEC.BAK or CONFIG.BAK.

During the Setup Process

Select **Continue** to move through the setup process and install Cache86 for Windows and DOS onto your hard disk.

Select **Back** to review or change responses.

Select **Exit** to end the installation process.

Select **Reset** (when available) to reset changes you have made to their original values.

Press **Tab** to move from field to field in the same screen

See Also

What is Cache86

Destination Path

Enter the drive and subdirectory into which you would like to install Cache86 for Windows and DOS.

If the subdirectory you specify does not exist, it will be created.   If it does exist, the files in it will be upgraded to this version of the program.

Type of Cache

Determines what type of memory resource to put the cache in.

Expanded Memory

This is the QEMM default.

(EMS)provides the smallest footprint in conventional memory, but it may require changes to your memory manager settings to get it working with Windows unless you are using .QEMM from Quarterdeck Corporation.

If you are using QEMM, Cache86 will add DBF=2 to the QEMM.SYS load line in CONFIG.SYS.   If you are using QuarterDeck's Stealth Doublespace driver, Cache86 will add the EXPCACHE:4 parameter on the ST-DSPC.SYS line in the CONFIG.SYS file.

If you are not using QEMM, look in the manual for your memory manager for references to "using an EMS cache" or "disk I/O to the page frame".   If you have difficulty, call us.

Extended Memory

(XMS)should require no changes to work.   The conventional memory footprint is larger then the Expanded Memory Cache.

None (Remove Cache86)

will disable automatic loading of Cache86 for Windows and DOS by not placing (or by removing) the load instructions from all registry   files.   This is the equivalent of **uninstalling the program** except the program files are not removed from your hard disk.

Memory Types and Usage

There are three types of memory that can be installed on a PC

1.   Conventional

2.   Expanded

3.   Extended

Other terms are used to refer to specific areas within these types of memory and standard methods relating to the use of them.

Technically, Conventional Memory is memory between 0 kilobytes (Kb) and 1024Kb (1 megabyte).   We refer to conventional memory (low memory) as that between 0 and 640Kb.   Lower Conventional memory is used by DOS application programs.   All contemporary computers have 640K of conventional memory.

Video memory, drive controllers, BIOS, and memory management programs use the **upper memory blocks** between 640Kb and 1Mb.   These UMBs are blocks of address which have been remapped with extended to create small storage areas for TSRs and device drivers.

Extended Memory is memory above 1Mb on an 286 (PC-AT), 386, or higher PC.   Extended memory cannot exist on an XT or PC.   Extended memory can be used for disk caches, print spoolers and RAM disks.   It cannot be used for running most programs under DOS although some programs are written with DOS extenders and they can use extended memory.   Most 386 and higher computers have options for 2 to 32 Mb of RAM.

XMS is "managed extended memory."   The extended memory specification (XMS) is a standard interface for accessing extended memory.   Windows requires XMS memory and therefore requires a memory manager which provides an XMS driver such as QEMM, HIMEM.SYS, or 386MAX to convert raw extended memory into XMS memory.

Expanded Memory is a special kind of memory that exists outside the PC's internal memory pool and does not occupy a specific range of fixed addresses.   Instead, any area of expanded memory can be mapped into an area in upper memory called a page frame and used by EMS aware programs.   Expanded memory can be installed on XT's, 286, 386, and higher machines.

The **HMA** (high memory area) is the first 64k (less 16 bytes) above the 1mb boundary.   This area is used to store the DOS kernel when the DOS=high command is in CONFIG.SYS.

Be aware that there is software that can make expanded memory work like extended memory, and software that can make extended memory act like expanded memory.

See Also

Cache86 Performance Setup

Total System Memory

System Memory reports the total memory (RAM) in your system.

This pool of memory may be distributed within your system as lower <u>conventional memory</u>, upper memory blocks, high memory area, expanded and extended memory.

See Also

<u>Cache86 Performance Setup</u>

Minimum and Maximum cache size

Minimum Cache Size

The Windows mode minimum is 0kb.

The DOS mode minimum is 256kb

Maximum Cache Size

The Maximum Size depends on the total system memory installed in your computer.
The Windows mode maximum will vary in line with the following schedule.

System Memory   **Maximum Size Windows mode**

- 2 Meg System   512kb
- 4 Meg System   1536kb
- 8 Meg System   5632kb
- 16 Meg System and greater   8192kb

If your system has less than 8 Meg and something other than 2 Meg or 4 Meg, Cache86 takes your total system memory and subtracts 2560kb.   The Maximum Size is that result or 512kb, whichever is greater.

The reason for the size limit is to insure that you have enough memory to run Windows.

The DOS mode maximum size may be the total of your memory up to an 8mb cache

See Also

Recommended Maximum Cache Size
Windows & DOS mode Cache Size
Cache86 Performance Setup

Recommended Maximum Size

The Recommended Maximum Size reflects a generalized recommendation for a cache size.   This is a good starting point for setting up your cache.

The "Set cache sizes to maximum recommended sizes" button will select the respective sizes in both the Windows mode and Dos mode fields.

It generally should be viewed as an upper limit on systems with less than 16mb of ram.   In situations where <u>system memory</u> is less than 16mb of total memory, you may find performance will improve by decreasing the size of your cache because Windows may not have enough memory and may be swapping to disk or unloading discardable code segments too often.

See Also

<u>Virtual Memory</u>
<u>Windows & DOS mode Cache Size</u>
<u>Cache86 Performance Setup</u>

Override Default Win95 caching

The following periods occur when running Windows 95:

Period	Windows caching
Bootup	no
Graphical User Interface	yes
Virtual machines	yes
Exclusive mode	no
Character based mode	no

Cache86 provides caching for each period above in which Windows does not whether the Override switch is on or off.

Unchecked: All memory is turned over to Windows and Cache86 does not provide caching when Windows does.   The Cache86 memory overhead for the kernel is only 3k in this mode.   Thus Cache86 takes no significant memory and is virtually invisible until it is needed.

Checked: Cache86 provides caching for all periods.

Selecting Override Default Win95 caching will, on many systems provide significantly improved performance.

When you check this, however you will be presented with a series of messages from Microsoft   telling you that performance will be harmed.

These messages will appear after your system is restarted.   They will thereafter not reappear unless you unselect this switch, restart, reselect the switch and then restart.

You will need to ignore these messages and make your own determination as to which setting is best for your system.   You will get these messages once each time you switch from unchecked to checked.   Cache86 is fully compatible with long filenames.

During periods when Windows is providing caching, Cache86 allocates memory according to the Windows mode size.   If the override switch is clear, this allocation is 0kb and all memory is turned over to Windows.

During periods when Windows is not providing caching, Cache86 allocates memory according to the DOS mode size and provides caching.

Cache86 will dynamically reallocate itself on this basis.   Selecting the override switch   provides you with full time caching regardless of what you are doing at your computer.

See Also

Windows & DOS mode Cache Size
Cache86 Performance Setup

Size of Cache

The Recommended Maximum Cache Size is normally a good place to begin in determining the best cache size for your system.

You can select a cache size in the range from the minimum and maximum supported cache size

Windows Mode Cache Size

If this is a new installation, the number in the Windows mode size field will be:

Windows 3.xx   the same as the Recommended Maximum Cache Size.

Windows 95   0kb unless "Override default Win95 caching"   is selected, in which case it will be the same as the Recommended Maximum Cache Size.

If this is not a new installation, it is the current size of your Windows mode cache.

DOS Mode Cache Size

If this is a new installation, the number in the DPS mode size field will be   the same as the Recommended Maximum Cache Size.   Otherwise it is the current size of your DOS mode cache.

Cache86 starts at the DOS mode size and will re-size itself to the Windows Mode size when the Windows GUI (Graphical User Interface) starts and will once again re-size itself to the DOS mode size when the Windows GUI exits.

Generally you will want the largest cache you can have.   If, however, you do not leave enough memory for Windows, performance can actually go down because you may be forcing Windows to swap to disk too often.   This can be a significant problem under Windows 95.

See Also

Minimum and Maximum cache size
Recommended Maximum Cache Size
Virtual Memory
Cache86 Performance Setup

Cache86 Performance Setup

The settings control how your system uses the cache.

Note: The defaults offered in each window are generally good choices for your system, or they represent the settings you are currently using on your Cache86.   **If you are unsure of what to do**, the default values are probably your best choice.   If that is the case, you can just click on OK and go on.

Cache Type and Size

System Memory
Type of Cache
Override Default Win95 caching
Size of Cache
Minimum and Maximum cache size
Recommended Maximum Cache Size

Performance Options

Staged Write On/Off
Delay (factors)
Buffers (kb)
Load High
Beep on Flush
Compatibility Switch
Dirty (percent)
Sectors (Max)
32 Bit Disk Access
CD ROM Buffers
DOS Buffers

The **Reset Button** reestablishes the selections that were set when the dialog box was initiated.

The **Sys Edit Button** starts a multi document editor and opens AUTOEXEC.BAT, CONFIG.SYS, SYSTEM.INI and WIN.INI.   You can use this to remove third party caches or make other modifications you wish.

Note: The SMARTDRV cache is automatically detected and removed by the Cache86 setup program. If you have replaced SMARTDRV with another disk cache program, you must remove it.   The Sys Edit Button will give you access to your AUTOEXEC.BAT file for this purpose.

See Also

Panel Preferences
Loading Cache86 High

Uncommitted Data

Data which has been written to the cache but not yet written or flushed to the hard disk.

Staged Writes

Cache86 can be configured to operate in either of two different ways.

One method, called **write-through**, writes information to the disk immediately.

The second method, called **staged writes**, writes immediately to the cache and then optimizes the writes to go to the hard disk and attempts to identify moments of CPU inactivity to do the actual writes.

Both methods increase the overall performance of the computer by reducing the number of physical disk reads.   A staged write cache significantly improves overall throughput when writes take place.

See Also

Staged Write Issues
Staged Write On/Off
Cache86 Performance Setup

Staged Write issues

You should be aware of some things when using staged writes.

When a program writes data to the disk, DOS performs the operation.   With Staged Writes enabled, the cache is updated but the data may not actually be written to the disk.

Because certain types of data are written many times, some writes may never have to hit the hard disk because it may change before being flushed.   This and the fact that writes are sorted into the physical order they will go onto the disk instead of the random manner   requested saves both the head movement and the data transfer resulting in substantial speed improvement.   At certain intervals, the cache will flush, i.e., the cached data is written to the disk, removing the threat of data loss.

By default, flushing occurs after about one second of inactivity.

Potential Risks

If the power fails or the computer is turned off during a moment when information in the disk cache has not yet been written to the disk by a staged write cache, the data will be lost.   Most people think about this problem when considering delayed write disk caches.   Of course data will be lost if the power fails during a write even if you have no cache at all.

Another concern is that the memory used by a cache is merely another section of memory that can be corrupted or over-written by an errant program (like misbehaved shareware).   If this happens, any data in the cache could be scrambled or destroyed.

Sometimes pieces of the <u>file allocation table</u> are in the cache.   If the cache becomes corrupted and the FAT is written to the disk, the disk could be scrambled.

Computer hangs will not necessarily destroy your data.   Hangs may be stable (like a piece of code being repeated in a loop) or unstable.   If the computer is in an unstable condition, it may go off and execute some random code, do something to destroy the interrupt vector table, or overwrite the buffers or cache. When the computer hangs in an unstable condition, there is a likelihood that data will be lost.   A stable hang will not result in data loss.

If the machine locks up in stable condition, you have two options.   First, press [Ctrl][Alt][Del] to invoke a write to disk.   Second, wait for the time out period before turning off the machine.   The time out period is the period of delay before the cache writes to disk.   The default is 1 factor which represents approximately one second unless specified otherwise.   When you reboot, all your files may be fine.

Even if you turn on the staged write option, we wish to emphasize that Cache86 has no more risks than other disk cache software.   The difference is that we tell you about the risks.   All staged write cache programs have the same risk of data loss.

In certain instances, activating the staged write option may not be a good choice.   If you don't fully understand the implications of using staged writes, or if you fall into the following categories, you should carefully consider foregoing the staged write option.

Situation	Reason
Developing software	You can crash your system while debugging.
On a network server	If someone causes the server to hang, all network users' pending data may be lost. Note: This precaution applies only to the server, it does not preclude use of staged write caching on the local drive.
Power outages	Data may be in the cache when the power goes off.
Untested software	The software may hang.

What's the bottom line?   In spite of the speed improvement, if your system is likely to hang or be turned off before a flush takes place, you should use Cache86 in write through mode.

Select Setup from the Cache pulldown menu on the Cache86 Panel to change the Staged Write Settings

See Also

Staged Writes
Staged Write On/Off
Cache86 Performance Setup

Staged Write On/Off

CheckBox Setting	Resulting condition
Checked	Staged writes are enabled and can be turned on or off from the Cache86 Control Panel.
Unchecked	Staged write code is loaded but the cache is initially set in write through (staged writes disabled) mode. Staged writes can be turned on or off from the Cache86 Control Panel.

See Also

Staged Writes
Cache86 Performance Setup

Staged Write Delay

Set the idle time factor for the cache to wait before doing a data flush to the hard disk.

If a large number of writes are pending, flushes may be forced out sooner than the delay setting.

The default value for this setting is 0 and can range from 0 to 10.

Cache86 begins flushing pending data from the cache after identifying a period of CPU inactivity.   The Staged Write Delay Factor determines how CPU inactivity is interpreted.   The higher the number, the longer the system must be idle before Cache86 begins to write to disk.   The advantage to using a higher number when you are not in high risk situations is that <u>uncommitted data</u> will remain in the cache longer and the chances are greater that the data will be changed before it is written which will reduce the number of physical writes performed.

The lower the number, the less risk of data loss because pending writes are written to disk during shorter periods of inactivity.   0 is a good setting as you derive the benefits of advanced write handling yet no artificial delay is imposed.

See Also

<u>Staged Writes</u>
<u>Cache86 Performance Setup</u>

Staged Write Buffers

This setting is used only by the extended model of the cache.   It is handled internally by the EMS model.

Set the number of staged write buffers.

The Default is 5 which uses 10kb.

Each buffer is 2kb in size so reducing the buffer count to 3 will decrease the size of the extended memory cache kernel by 4kb.

If you need to shrink the cache kernel, 3 is a good setting and will not hurt performance very much. Setting this number below 3 may yield unacceptable performance.

You may want to experiment with higher settings to see if they benefit your system.   Good numbers to try are 9 and 13.   On most systems, 5 is a good number.

If the staged write code is not loaded, no staged write buffers are created.

See Also

Staged Writes
Cache86 Performance Setup

Beep on Flush

Setting this on will cause Cache86 to beep the system speaker each time a flush of data is initiated from the cache to the hard disk.   This not normally a desirable feature, but you may want to use it for a while to get the feel for the dynamics of <u>Staged Writes</u> at different <u>Delay settings</u>

Note: Setting this on can be irritating.

See Also

<u>Staged Writes</u>
<u>Cache86 Performance Setup</u>

Compatibility Switch

This check box will be disabled if your system was identified as not fitting the profile for which the switch is intended.

This optional parameter is very seldom needed   It may be required if you are having trouble running Cache86 on an EISA computer or on some older SCSI hard drives.   Setting this check box will disable one of the Cache86 performance optimizations so you would not choose to select it without cause.

See Also

Staged Writes
Cache86 Performance Setup

Dirty (percentage)

Percentage of cache which may become filled with data to be written to the disk before forcing a flush. The default value is 100%.

The higher the number, the faster the operation of your computer because it will not take time to write to disk as often and the longer <u>uncommitted data</u> is retained in the cache, the greater the chance of secondary changes to that data which would result in some writes never needing to take place.

However, there is less exposure for data loss with a lower number because flushes occur more frequently.

See Also

<u>Staged Writes</u>
<u>Cache86 Performance Setup</u>

Sectors (Max)

This setting controls the maximum number of sectors to be copied between the cache and <u>conventional memory</u> at one time.

For an Extended Memory cache, the setting 128.

For an Expanded Memory cache, the setting will display 32, but this is handled internally.

Beginning with Cache86 kernel version 5.01a   this setting is no longer user selectable.

See Also

<u>Staged Writes</u>
<u>Type of Cache</u>
<u>Cache86 Performance Setup</u>

32 Bit Disk Access

Use this check box to turn on or off 32-bit disk access.

When you installed Windows, the Windows Setup program checked to determine whether your hard-disk controller was compatible with the 32-bit disk access feature.   If the Cache86 Setup program cannot determine compatibility, the check box is grayed and disabled.

If you get a Disk Time-Out Error, the hard disk on your computer has failed to respond.   The 32-bit disk-access feature may not be compatible with your computer's hard-disk controller.   This may be the case with battery-powered portable computers whose power-saving features are enabled.   Some laptops with power-saving features support 32 bit disk access.   The best and safest way to find out about compatibility is to contact your laptop manufacturer.

Advantages to 32 Bit Disk Access

- **Better performance**
You get better performance, including more pageable memory and up to 15 percent faster paging, less system overhead, and support for overlapped I/O.
- **More MS-DOS virtual machines**
You can run more MS-DOSâ based applications simultaneously using Windows-based virtual machines.
- **Access to new (OEM) technologies.**
Take advantage of new technologies (such as improved disk seeking) that cannot be used with the current BIOS.
- **Support for new applications**
Independent software vendors (ISVs) can use 32-bit disk access to write new utilities for tasks such as asynchronous I/O and background read-write operations.

32 Bit Disk Access can degrade performance

Disabling 32-bit disk access can improve hard drive performance if you have a system BIOS or hard drive controller designed and optimized specifically for your hard drive.

Some hard drive controllers have built-in optimizing routines that are similar to those that the 32-Bit Disk Access system uses.   In these cases, 32-bit disk access can degrade hard drive performance because some optimization routines may occur multiple times for each disk operation. This results in slower overall disk access.   Consult your hardware documentation to see if your hard drive controller or BIOS provides any built-in disk access optimizations that may make the use of 32-bit disk access unnecessary.

See Also

32-Bit File Access

Windows for Workgroups 3.11 Only.

Windows for Workgroups 3.11 provides a feature called 32-bit Disk Access which is implemented as two Windows virtual device drivers, VFAT.386 and VCACHE.386.   It is not present in Windows 3.1 or 3.11.

The 32-bit File Access feature is disabled by default when Windows for Workgroups 3.11 is installed.

Although we know of no known compatibility between Cache86 and VCACHE, there are many documented incompatibilities with other software products.   For this reason we recommend not enabling 32 bit File Access.

See Also

32 Bit Disk Access

CD ROM Buffers

Note: This item will be grayed out under Windows 95 when it is handled internally.

Sets the number of sector buffers for MSCDEX.

The number can range from 0 to 1024 and the buffers will be placed in <u>Expanded Memory</u> if available.   If no Expanded Memory is available, the buffers will be placed in <u>Conventional memory</u> which is undesirable because it will detract from the available memory in which your DOS applications run.   If you choose not to provide Expanded Memory, do not set the buffers higher than 32.   Expanded memory is very useful to some programs.   If you have disabled it to recover the space otherwise taken up by the page frame, look into <u>QEMM by Quarterdeck Corporation</u>.   It has a feature that allows the page frame to serve multiple purposes and can give you more upper memory than without using Expanded Memory.

If you set a high number and find that your Conventional memory has been decreased, you have your system configured for less Expanded Memory than necessary or no Expanded Memory at all.   See the documentation for your memory manager for information on how to configure Expanded Memory.

To get the best results, insure that you have sufficient Expanded memory and set the buffer count to 96 or more.

Each buffer will use 2kb and expanded memory is allocated in 16kb pages, therefore, the choices offered are in units which efficiently use the page frame.

Examples:

# of Buffers	Expanded Memory Usage
8	16kb
16	32kb
24	48kb
96	192kb
256	512kb
1024	2048kb

The higher the number, the faster your CD ROM drive will be.

See Also

<u>Cache86 Performance Setup</u>

DOS Buffers

If this item is blank, it means you are using the default DOS Buffers for the version of DOS which your computer is running.   This setting is OK.

DOS Buffers allocates memory for a specified number of disk buffers when your system starts.   This command can be found in your CONFIG.SYS file.

This setting should be fairly low when using Cache86 because Cache86 provides the service more efficiently and using too many buffers will waste memory and actually slow down your system when Cache86 is in use.

The Syntax is

      BUFFERS=n,[m]

where

n   Specifies the number of disk buffers.   MS-DOS supports a value of 1 through 99, however the Cache86 Setup dialog box provides a range up to 15 + the value found in your CONFIG.SYS setting.

m   Specifies the number of buffers in the secondary buffer cache.   The value of m must be in the range 0 through 8.

The recommended setting is 8 or 10 buffers and 4 or 8 secondary buffers depending on the cluster size of your hard disk.

For a 2k cluster select 4 secondary buffers.

For a 4k cluster select 8 secondary buffers.

See Also

Cache86 Performance Setup

What is Cache86? What It Can Do for You!

Cache86 is a disk cache program.

A cache is a section of memory set aside by Cache86 to temporarily store data.   Cache86 monitors the flow of data to and from the hard disk.   When a program requests data, Cache86 checks the cache.   If the requested data is in the cache, Cache86 transfers the data directly from the cache to the program.   If the data is not in the cache, Cache86 transfers it from the hard disk and places a copy in the cache.   This memory-to-memory transfer from the cache is much faster than rereading the hard disk each time.

Cache86 runs many programs faster by substantially reducing the number of disk reads and writes.   For applications that use the hard disk extensively, such as Windows, data base programs and many others, Cache86 can improve performance by orders of magnitude.

If memory is in short supply on your system, Cache86 is the most memory efficient cache program available.

If the optional staged write capability is enabled, Cache86 can increase application programs' speed even more.

When a program writes to the disk with staged writes enabled, Cache86 immediately copies the data to the cache but does not update the disk.   Cache86 then attempts to identify moments of CPU inactivity and then writes the data to the disk.   Therefore, information that changes often, like File Allocation Table (FAT) entries, may be written only once instead of constantly.

See Also

Staged Writes
Type of Cache

Start Menu or Program Manager

During setup, you will be asked where you want to place the program icons.

You have the following choices

Selection	Action
New Group	A new item named Cache86 will be created and the Cache86 Program Items will be added to it.
No Entry	No startup entries will be created. Note: If you select this, you will need to run the Cache86 Control Panel from the Run Command or create an entry yourself.

Program Item

An application or document represented as an icon in a group window.

Group

A collection of applications within Program Manager.
Grouping your applications makes them easier to find when you want to start them.

Group Window

A window that displays the items in a group within Program Manager.   These items can be applications, files associated with applications, or a combination of both.

Title Bar

The horizontal bar (at the top of a window) that contains the title of the window or dialog box.   The "Caption Only" size setting displays only the Title Bar and Menu Bar of the Cache86 Panel.

Virtual Memory

Windows can be configured to allow you to run larger or more programs at one time than you actually have physical memory for.

Virtual Memory is implemented by creating a swap file on your hard disk which Windows will then treat as if it were actually system memory.

The advantage of using virtual memory is that your system will appear to have more memory while working under Windows.

The disadvantage is that the swap file can take significant space on your hard disk and when Windows uses it, execution time of your computer will increase.   Heavy use of the swap file can slow your system to a crawl.

Windows platforms require a lot of memory.

Windows 3.xx, you need a minimum of (8 - 16 MB recommended).

Windows 95 needs 16 MB and up.

If you get out of memory messages from Windows or your system seems to run slowly, you might experiment with a smaller Windows Mode cache size

See Also

Size

Cache86 Panel Operation

Click on any graphic on this screen for information about it

Cache86 Panel Push Buttons

It is safe to activate any button even when disk activity is in progress.

Cache86 Panel Statistics Window
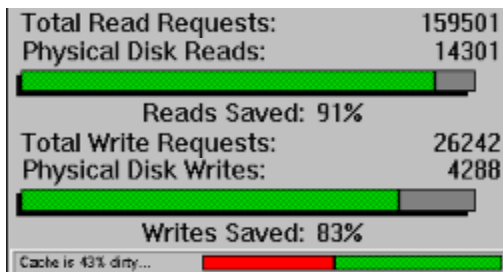
This information is <u>updated every 2000 milliseconds</u> and provides you with the actual and precise number of times relevant for each activity.   You can use this information to measure variations in configurations to optimize performance.   The frequency is adjustable from the <u>Panel Preferences Dialog Box.</u>
It is highly recommended but not mandatory that the Cache86 Panel be active or even loaded for Cache86 to work.   However, with the panel loaded, you obtain the following benefits:
● Enhanced communication between Windows events and the cache resulting in faster, smoother, and safer operation.
● Any pending writes are flushed when you quit Windows.
● Push button control of cache operation.
● Ability to reconfigure the cache on the fly.
● Instant and precise information on system performance.
If the Cache86 Panel is not loaded, the cache kernel will be unaware of what is taking place in Windows and events such as window redrawing, mouse movement, keyboard activity, etc. may at times appear jerky because disk activity is taking place.

If you do not want to devote screen space to the Panel, see the <u>Panel Preferences Dialog Box</u> for Minimized and Hidden options.

See Also

<u>Menu Bar</u>

Menu Bar

- [Cache Pulldown](#)
- [Options](#)
- [Help](#)

The number on the right of the Title Bar displays free system resources.   While this is not cache related, it can have an effect on the speed of your Windows session.

See Also

System Resources
Cache86 Panel Operation

System Resources

A dynamic display of free system resources can be displayed on the right of the Menu Bar.

To enable the display, select Show System Resources from the <u>Preferences Dialog box</u>.

While this is not cache related, it can have an effect on the speed of the your Windows session.

What are System Resources?

Windows 3.xx

Windows System Resources refer to the local memory used by   GDI.EXE and USER.EXE.   Under Windows 3.xx, each of these local memory areas are only 64kb.   This small area of memory is where Windows stores information about and handles to resources.   The number displayed is the lower value of USER and GDI resources available.

- GDI resources such as device-context handles, brushes, pens, regions, fonts, and bitmaps.
- USER resources such as window and menu handles.

As you open applications, this number will become smaller as resources are allocated.   If the number becomes   too low, performance will suffer.   If System Resources get down to 10 to 15 percent, you should immediately close some of your applications.

Resource leakage occurs when misbehaved applications allocate resources and then fail to release them. If this occurs, the only for you to reclaim these lost resources is quit and restart Windows.

Note: You cannot increase the memory for system resources by adding memory to your computer .   A 4MB system has the same space as a 64MB system.   In other words it is a precious resource on any Windows System.

Note: If you sense that Windows seems to slow down after working in it for a while, you may want to monitor system resources to determine if one of your applications might be generating resource leakage.

Note: Some programs will use a very large portion of your free system resources when running all by themselves.   It can be helpful to know which programs are heavy consumers and avoid opening more than one of them at a time when possible.

Windows 3.xx has the limit of between 150 and 200 system wide device contexts.

Windows 3.xx has the system-wide limit of 200 menu and window handles.

Windows 95

The use of system resources in Windows 95 is improved over that in Windows 3.xx .

In Windows 95, large portions of the graphics device interface (GDI) and USER heaps reside in the shared 32-bit virtual flat-address space of the system. This address space is shared by all cached objects in Windows 95 (for example, the disk I/O cache, the network cache, the GDI cache, and third-party shared application data). This region of memory is as large as your physical memory plus your swap file.

 Windows 95 incorporates the Windows 64-kilobyte (K) system-resource limit for better performance when it is providing backward compatibility. Items that remain in one or more 64K segment(s) are mostly for use in the GDI heap and include logical pens, logical brushes, logical fonts, bitmaps, and palettes. To improve the use of system resources, Windows 95 moves the following items into the 32-bit shared address space:

> device contexts,
> physical pens
> physical brushes
> and so on.

Windows 95 has the limit of approximately 4,000 system wide device contexts.

Windows 95 has the system wide limit of   total limit for menu and window handles of 32,767 each per process.
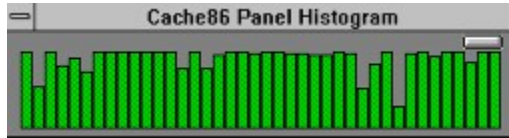
See Also

Menu Bar

Cache Pulldown Menu

Histogram

This option presents a real time picture of the cache hits as they occur.   The small button in the upper right will reset the Histogram entries.   See Panel Preferences.

Statistics

The Static Popup Window shows additional options that are currently active on your cache.   To make changes, access Setup from the Cache Menu.
Two items which are not cache related, but which can have an effect on the speed of the Windows session are Free Global Memory and System Resources.   As you open applications, both of these will diminish.   If either become too low, performance will suffer.   If System Resources get down to 10 to 15 percent, you should immediately close some of your applications.   If misbehaved applications have allocated resources and failed to release them, you may need to quit and restart Windows to reclaim them.   Generally, if you sense that Windows seems to slow down after working in it for a while, you may want to monitor these two statistics to determine if one of your applications might be generating resource or memory leakage.   See Panel Preferences.

Module Listing Display

This displays a list of all currently loaded modules (pieces of programs) and their allocated memory   It may take several seconds to accumulate the list because thousands of Global Memory Objects are being examined for each module to determine ownership.   If you load a program and want to see its impact, click the Rescan button and the list will be updated.
If you select an item, a dialog box will present following data:

1.   The path to and name of the file from which the module was loaded.

2.   The number of times the module is currently being requested.

3.   The size of all Code segments

4.   The size of all Data segments

5.   The size of all Resource data

6.   The size of all Other memory allocations made by the module.

If version information is available in the file, the full details available will also be presented.

Setup

This accesses the Setup Dialog Box and is used to make changes to your Cache86 defaults.   See Cache86 Performance Setup

Preferences

This accesses the Panel Preferences Dialog Box and is used to make changes to the appearance and function of the Cache86 Panel.   See Panel Preferences

Exit

Quits the Cache86 Panel.   The cache will continue working but will cease to be Windows aware.

See Also

Menu Bar
Cache86 Panel Operation

Code Segments

Layman:

Code segments contain the program logic.   These are the instructions which cause a program to do things.

Technical

GT_CODE   program code

Data Segments

Layman:

Data segments contain text, values, pointers, and space to store temporary things in

Technical

GT_DGROUP,   the default data segment and the stack segment.
GT_DATA   Contains program data. (It may also contain stack and local heap data.)
GT_UNKNOWN   The memory type is not known.

Resource Segments

Layman:
Resource segments contain graphics, text, menus, etc. which the program uses to communicate with you.

Technical
GT_RESOURCE   Contains one or more of the following

GD_ACCELERATORS accelerator table.
GD_BITMAP   bitmap. This includes the bitmap color table and the bitmap bits.
GD_CURSOR   group of cursors. This includes the height, width, color count, bit count, and
                    ordinal identifier for the cursors.
GD_CURSORCOMPONENT   a single cursor. This includes bitmap bits and bitmasks for the cursor.
GD_DIALOG   controls within a dialog box.
GD_ERRTABLE   the error table.
GD_FONT   a single font. This data is identical to data in a Windows font file (.FNT).
GD_FONTDIR   a group of fonts. This includes the number of fonts in the resource and a table of
                    metrics for each of these fonts.
GD_ICON   a group of icons. This includes the height, width, color count, bit count, and
                    ordinal identifier for the icons.
GD_ICONCOMPONENT   a single icon. This includes bitmap bits and bitmaps for the icon.
GD_MENU   menu data for normal and pop-up menu items.
GD_NAMETABLE   the name table.
GD_RCDATA   a user-defined resource.
GD_STRING   the string table.
GD_USERDEFINED   Has an unknown resource identifier or is an application-specific named type.

Other segments

Layman:
Memory used to handshake with Windows.

Technical
Contains one or more of the following:

GT_TASK	Contains the task database.
GT_MODULE	Contains the module database.
GT_INTERNAL	Reserved for internal use by Windows.
GT_SENTINEL	Either the first or the last object on the global heap.
GT_BURGERMASTER	Contains a table that maps selectors to arena handles.

Static Popup Window

Item	Meaning
Flush Delay Factors	The Flush Delay Factor determines how long the period of CPU inactivity should be before starting a Staged Write Flush. See also <u>Staged Write Buffers</u>
Dirty Setting	Percentage of cache which may become filled with data to be written to the disk before forcing a flush. The default value is 100%. See also <u>Dirty (percent)</u>
Max Dirty Setting	The maximum dirty setting for the currently loaded model and version of Cache86.
Currently Dirty	The percentage of the cache which currently holds uncommitted writes.
Max Sectors	This maximum number of sectors to be copied between the cache and <u>conventional memory</u> at one time. For an Extended Memory cache, the setting 128. For an Expanded Memory cache, the setting 32.
Sample Frequency	The frequency at which the Panel time slices and updates itself. You may change this setting from the Setup Dialog Box.
Global Memory	Under Windows 3.xx, the amount of free memory available at the time. Under Windows 95, the total Global Memory.
System Resources	The percent of free space for System Resources.

See Also

<u>Cache86 Performance Setup</u>
<u>Menu Bar</u>
<u>Sectors (Max)</u>
<u>Cache Pulldown Menu</u>

Options Pulldown Menu

This menu provides placement options for the Cache86 Control Panel.   To move the panel, you may select any of these items, or move the Panel like you do any other Windows window.   Several size options are available.

Note: The Cache86 Panel tries to use the MS Sans Serif font family which is supplied with Windows.   If you do not load this font, the Panel will try to find a font which you do load that is close.   If the appearance of the fonts in the Panel is unsatisfactory, you may improve them by one of the following methods:

From the Windows Control Panel select Fonts and add the MS Sans Serif family.

If the MS Sans Serif fonts are not loaded, you can add a font substitute line to your WIN.INI file.   Look for the heading [FontSubstitutes] and under that heading add the line MS Sans Serif=[the font you would like the Cache86 Panel to use].   For example MS Sans Serif=Times New Roman would cause a serifed font to be displayed.

See Also

Menu Bar
Cache86 Panel Operation

Help

You can find information in Help by using the index or the Search feature. To return to the Help Index after you read the instructions below, click the Back button or press the B key.

For complete instructions on how to use Help, press the F1 key while the Help window is active. or select Using Help from the Help Menu Item.

To use the Help Index
    Do one of the following:
       > Click an underlined topic.
       > Press the TAB key until you highlight the topic you want, and then press the ENTER key.

To scroll in the Help window
    Do one of the following:
       > Press up or down arrow keys.
       > Use the scroll bars with the mouse.

To return to the previous topic
    Click the Back button or press the B key.

To open the Search feature in Help
    Click the Search button or press the S key.

To close the Help window
    From Help's File menu, choose Exit (ALT, F, X).

See Also

Menu Bar
Cache86 Panel Operation

Flush Button

If writes are pending, this button is active and pushing it will immediately suspend any operating programs and cause all pending writes to be written to the hard disk.   Upon completion of this complete flush, any processes which were operating will immediately resume.

This button is inactive if any of the following is true:

1. The cache is clean.
2. Staged Writes are OFF.
3. The cache is disabled.

Enable Button

This button is active at all times and serves one of two purposes depending upon whether the cache is currently enabled or disabled.

If the cache is currently disabled
The cache is enabled and the data area and all statistics are reinitialized.

If the cache is currently enabled
Pending writes (if any) are immediately sent to the disk.   The cache data area and all statistics are reinitialized and cache operation continues.

Disable Button

This button will immediately flush any pending writes and disable the cache.

If the cache is disabled, this button is inactive.

Reset Button

This button will immediately flush any pending writes, reinitialize the cache data area, and reset all statistics.

If the cache is disabled, this button is inactive.

Note: A button titled Reset will also be found on the <u>Performance Options</u> and <u>Panel Preferences</u> Dialog Boxes.   This button reestablishes the selections that were set when the dialog box was initiated.

Staged ON Button

This Button indicates that the advanced Staged Write feature is on (write back mode).   Pushing the button in this state will disable Staged Writes.

If the cache is disabled, this button is inactive.

Staged OFF Button

This Button indicates that the advanced Staged Write feature is off (write through mode).   Pushing the button in this state will enable Staged Writes.

If the cache is disabled, this button is inactive.

Version

This area indicates the release version of the Cache86 kernel you are running.   To determine the version of the overall product, look at "Help About" in the Cache86 Panel.

Memory

This area indicates the type of memory the cache is using.

1.   EXT = Unmanaged Extended Memory.

2.   XMS = Managed Extended Memory.

3.   EMS = Expanded Memory.

Size of Cache

This represents the size of the cache in Kilobytes.

Conversion examples

1. 2048kb = 2 megabytes.
2. 8192kb = 8 megabytes.
3. 512kb = 1/2 megabyte.

Kernel

This number is the actual size of the cache kernel in bytes.   The kernel size can vary significantly depending on the cache model and features you have selected.

The kernel size can be useful when specifying a size parameter to memory managers for loading the kernel in upper memory blocks.

Total Read Requests

This number represents the actual and precise number of times physical reads would have taken place in your system had Cache86 not been loaded and active.

Physical Disk Reads

This number represents the actual and precise number of times physical reads from the hard disk took place.   The difference between this number and Total Read Requests is the read hit ratio expressed as a percentage..

Reads Saved

This bar graph represents the read hit ratio based on reads made from the cache instead of the hard disk.

Total Write Requests

This number represents the actual and precise number of times physical writes would have taken place in your system if Cache86 had not been active with the advanced Staged Write feature enabled.

Physical Disk Writes

This number represents the actual and precise number of times physical writes to the hard disk took place.   The difference between this number and Total Write Requests is the write hit ratio expressed as a percentage.

Writes Saved

This bar graph represents the write hit ratio based on actual writes made to the hard disk instead of the write requests which were made.

Clean or Dirty Cache Indicator

When disk writes are pending in the cache, this indicator will display a graph representing the percentage of the cache filled with <u>uncommitted writes</u> and the numerical equivalent as shown.

If no <u>uncommitted writes</u> exist in the cache, this display will be replaced with the message **Cache is Clean...**

Note: **You would not want to turn the power switch off or reboot your computer with a reset switch (both of which perform a cold boot) when this indicator shows a dirty condition.   However, remember that Ctrl+Alt+Del (a warm boot) is always safe because Cache86 intercepts this and does not process the warm boot until it has flushed all uncommitted data to the hard disk.**

Sample Frequency

The Cache86 Panel updates its screen at a 2000 millisecond (approximately every 2 seconds) sample rate.   If you change the Delay Factor to a high setting, Cache86 may decrease the sample frequency rate to avoid interference with CPU inactivity detection.

This means that high Delay Factor settings will cause the Cache86 Panel screen to be updated less frequently.   This in no way affects the operation of the cache, but merely the visual impact of the Panel.

You can see the current sample rate in the Static menu item of the Cache pulldown menu.

File Allocation Table (FAT)

The file allocation table provides a map to the storage locations of files and directories on a disk by indicating which clusters are allocated to each file and in what order.

Conventional Memory

The first 640k of memory reserved for DOS applications and DOS internal components.   Even if the DOS application uses other types of memory, it will initialize and run in this area.

Expanded Memory

A type of memory that exists outside of the PC's internal memory pool which is used to provide additional space for DOS applications.   EMS-aware DOS applications access this memory through an EMS driver which is provided with your memory manager.

The EMS driver is designed to the Expanded Memory Specification which is the standard definition of the use of expanded memory resources.   Developed by Lotus, Intel, and Microsoft, EMS was later revised to include AST's Expanded Memory Specification (EEMS).   Your EMS driver should be LIM version 4.00 or better.

Extended Memory

The range of memory that starts at 1MB and extends to 16MB (on a 286) or 4GB (on a 386 or higher). Extended memory is accessible only from the protected mode of 286 or higher CPUs.   Windows executes within extended memory.

XMS (the Extended Memory Specification), is provided by your memory manager and provides a standard way to access extended memory.   XMS is frequently referred to as managed extended memory and Extended Memory as raw or unmanaged memory.   Cache86 can operate in either of these memory environments.

Cache86 Panel Preferences

The Cache86 Panel Preferences dialog box provides you with StartUp selections.

Loading

Auto Load sets an instruction in WIN.INI to preload the Cache86 Panel when Windows starts. Deselecting this will remove the WIN.INI load instruction.

Minimized (available if Auto Load is selected) selects whether the Cache86 Panel will come up as an Icon or with the Panel visible.   If System Resources are turned on, the percentage free shows below the icon.

Hide Icon (available if Minimized is selected) causes the Cache86 Icon to appear for a few moments and then hide itself to reduce screen clutter.   The Panel continues to run normally even when hidden.   Once the icon hides itself, the Panel can be accessed by double clicking the Cache86 Icon on Program Manager or any other method of running the program.   The Cache86 Panel will run only one instance of itself.   If it is already running, running it a second time will unhide, unminimize and bring the Panel to the top of other windows.

Always On Top will maintain the Cache86 Panel window as a 'Topmost' window and it will show on top of an overlapped active window.   This can be useful if you wish to have constant visual access to the Panel, but it will obscure that portion of the active window which it is over.   This feature can be toggled from the Panel by selecting the Always On Top menu item of the Options Pulldown Menu.

Show System Resources enables a display of free resources on the right side of the menu bar.   If you are tracking this statistic but do not wish to have the entire panel on the screen, a useful setting is (Lower Right | Caption Only | Always on Top | Show System Resources).

Histogram

Show Histogram selects the optional automatic display of the Histogram along with the Panel.   This option applies to Auto Load (if selected) as well as any subsequent initializing of the program during the Windows session.   A convenient way to display the Histogram with minimum screen usage is to reduce the size of the Cache86 Panel to Caption Only and turn Histogram on.   This works particularly well in conjunction with the Always on Top election.

Animate Icon enables a functional Histogram Icon which shows hit rates and displays a red bar when writes are pending in the cache.   If System Resources are turned on, the percentage free shows below the icon.   Note this animation works only in Windows 3.xx.

Sample Frequency selects the frequency   with which the Cache86 Panel checks the cache hit rate.   The range is from 500 to 5000 milliseconds with 2000 milliseconds as the default.
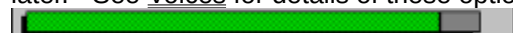
Position

Positions the Panel on the screen in your choice of the four corners.

Voice

These options are available only under Windows 3.1 or later.   See Voices for details of these options.

The **Reset Button** reestablishes the selections that were set when the dialog box was initiated.

See Also

Cache86 Performance Setup
Menu Bar
Cache Pulldown Menu
Voices

Alphabetic Listing

QEMM

QEMM is a memory manager from:

Quarterdeck Corporation
13160 Mindanao Way
Marina del Rey, CA 90292-9705
Voice   (310) 309-3700
Fax   (310) 309-3214

We recommend QEMM as a replacement for the Microsoft memory manager   (HIMEM.SYS, EMM386 and MemMaker) for several reasons.

Provides more lower Conventional Memory and more Upper Memory

Provides a faster implementation of XMS and EMS memory

Provides a proper method for using programs which perform disk I/O to the page frame

It is solid

End user support is good

Reference Subjects

Cluster Size

DOS allocates space on your disks in units of clusters.   A cluster is a fixed number of contiguous sectors. The sector size is usually 512 bytes (only non BIOS-compliant hard drives use sector sizes other than 512 bytes and these are not supported by Cache86) and the cluster size of hard disks is usually 4 sectors (2048kb) or 8 sectors (4096kb).   Very large hard drives and drives using real time data compression like Stacker, SuperStor or DoubleSpace frequently use even larger cluster sizes.

In general, larger cluster sizes are used to support larger hard drives.   Although smaller cluster sizes make allocation more space-efficient, larger clusters can be more efficient for random and sequential access especially on fragmented disks.

To determine the cluster size of the drives in your system, run the DOS utility CHKDSK from a DOS prompt.

Example

   CHKDSK C: will check and report on drive C:.

The resulting display will include a line that refers to bytes in each allocation unit.   Microsoft in its continuing war on consistent semantics refers here to a cluster as an allocation unit.   If you see the number 2048, that means the drive has been formatted to use 4 sectors per cluster.   If the number is 4096 it uses 8 sectors per cluster.

See Also

DOS Buffers

Loading Cache86 HIGH

Cache86 may be loaded into the upper memory area. Doing so has no beneficial impact on Windows applications but leaves more room in <u>conventional memory</u> for DOS applications whether they are run from Windows or not.

If you uncheck the Load High Check Box, the current load high instruction (if any) will be removed from the Cache86 load line.

If you check the Load High Check Box, one of the following will take place.

The Cache was not previously loaded high
> If you are using <u>QEMM</u>, a pathed LOADHI prefix will be added to the Cache86 load line otherwise an LH prefix will be added.

The Cache was previously loaded high
> The previous load high instructions will be preserved.

Cache86 will load high if you are running DOS 5 or higher using the standard Microsoft memory manager HIMEM.SYS or using <u>QEMM</u> v6 or higher.   Command syntax for previous versions of QEMM and 386Max varies.   If you are using one of these, Cache86 may fail to load high (it should successfully load into lower memory instead).   In this case, refer to your particular memory managers documentation for proper load high syntax.

If Cache86 fails to properly load into high memory, for the above or any other reason, you should run the Memory Manager Auto Install Program supplied with your memory manager.

Following is a list of autoinstall programs for three popular Memory Managers.

Memory Manager Auto Install Programs

Optimize	**QEMM by Quarterdeck Corporation**
Maximize	386Max by Qualitas
MemMaker	by Microsoft

See Also

<u>Cache86 Performance Setup</u>

Error Messages

Cache86 Kernel Not Installed
An Error was Encountered Reading AUTOEXEC.BAT or CONFIG.SYS
An Error was Encountered Writing AUTOEXEC.BAT or CONFIG.SYS

For help call: The Aldridge Company technical support.

See Also

Alphabetical Listing

Error - Reading File

The Cache86 Setup Program and the Setup Dialog Box   which is accessed from the Cache86 Panel may need to make changes to either or both of AUTOEXEC.BAT and CONFIG.SYS.

For help call: The Aldridge Company technical support.

See Also

Alphabetical Listing

Error - Writing File

The Cache86 Setup Program and the Setup Dialog Box   which is accessed from the Cache86 Panel may need to make changes to either or both of AUTOEXEC.BAT and CONFIG.SYS.

If you get a write error, make sure that you have not set the file to a read only status.   If you have, change it to a normal file.

If you (prudently) want to know what changes are being made to these files by Cache86 (or any other program   for that matter), a good practice is to make copies of the files to another name like AUTOEXEC.SAV.   You can then compare the original with the changed file any time you like.

For help call: The Aldridge Company technical support.

See Also

Alphabetical Listing

Error - Cache86 Kernel Not Installed

The Cache86 Kernel which should have been loaded from AUTOEXEC.BAT when your computer was booted was not found in memory.   Possible reasons for this condition are:

You have selected the Expanded (C86EMS.EXE) model of the cache and have configured your system without Expanded Memory or have less than the amount required for a minimum size cache.

SOLUTION: Run the Cache86 Setup Icon and select the Extended model cache or reconfigure your memory manager to provide Expanded Memory.

Cache86 is not loaded at all.   This could be because the Cache86 load line in your AUTOEXEC.BAT has been deleted or incorrectly modified.

SOLUTION: Run the Cache86 Setup Icon or edit your AUTOEXEC.BAT file and correct or add the Cache86 load line.

An old version of Cache86 is loaded.

SOLUTION: Run the Cache86 Setup Icon or edit your AUTOEXEC.BAT and correct the path in the Cache86 load line to point to the subdirectory containing the current files.

For help call: The Aldridge Company technical support.

See Also

Alphabetical Listing

Sound Driver Installation   (Windows 3.xx feature)

The Voice options in Cache86 require that a waveform device capable of reproducing voices be installed in your system.   If you have a sound board installed, this capability should be present.   If you do not have a sound board, Cache86 includes a Microsoft driver to provide this capability.   The driver may not produce high quality sound on all computer systems.   The performance is largely dependent upon the hardware itself.

If a suitable waveform device is not found, the Sound Button on the Cache86 Preferences Dialog Box will be grayed.   To install the driver supplied with Cache86, click the Driver Button.   This will run the Control Panel Driver Options.

1. From this window, select the Add Button
2. From the Add window select Unlisted or Updated Driver.
3. When prompted, place the Cache86 disk in Drive A or Drive B and follow the steps.   You will then be given the choice to Restart Windows or Continue.   Select the continue button to return to the Cache86 Preferences Dialog Box.
4. After the driver has been installed click the Setup button.
5. Then click Default to automatically adjust the driver to your system.
6. When the screeching has stopped, select No Limit on the 'Seconds to Limit Playback' Slider.

When you quit the Driver Option, you will be given the option to Restart Windows or Continue.   Do Not Restart Windows at this time.   You will again be presented with the option to restart Windows when the Cache86 Preferences Dialog Box has finished.   Select Restart at this time to load the new driver..

By default, the driver disables all interrupts while playing sounds for optimal sound quality.   As a result, you will notice that the mouse cursor, keyboard or other processes will not respond while sounds are being played through the PC Speaker.   You can set PC Speaker to enable interrupts for serial port activity and mouse movements in the PC Speaker setup dialog, at the expense of sound quality.

Note: It may be necessary to Enable Interrupts when running some communication applications.

Note: The Sound Driver provided by Cache86 for Windows and DOS is a Microsoft product and is protected by Microsoft's license agreement.

See Also

Voices
Panel Preferences

Voices

Cache86 can be configured to associate Voice Messages with various Panel Events.   You can select from a group of Male or Female voices or you can assign various system sounds to the actions.

Sound and Voice configuration is available from the Cache86 Preferences Dialog Box.

Male - Loads and selects Male voices

Female - Loads and selects Female voices

Note: If you have made any custom sound assignments to any event, and then change to "Male" or "Female" you will be given the option to retain them.

Note: If you have made a custom sound assignment to any event, it will be retained. If you want all custom assignments quickly removed, first select 'None" and then make the selection you want.

None - selects no voice or sound for actions

The various Wave (Sound) files have names which reflect their usage.

To assign custom sounds to the actions, select the Sound Button.   This will run the Control Panel Sounds option.

Note: If The Sound Button is disabled, you do not have a waveform device loaded.   If you have installed one from the Cache86 Preferences Dialog Box, you will need to restart Windows for it to load. The Sound Button will then be available.

Tip for saving disk space:

If you do not wish to use the voices, you may delete them from your disk by selecting the Delete Voices Button on the Cache86 Panel Preferences dialog box.   If at a later time you want to use them, they may be reloaded from the Cache86 diskette.   If you have both Male and Female Voices loaded, but have decided to only use one, delete the voices and then select the one you want.   The other will not be copied to the hard disk until you select it.

See Also

Sound Driver Installation
Panel Preferences

Browse for Voice Files

Use this dialog box to find and select the drive and directory where the Cache86 Voice Files are located.

 Open the Drives list, and then select the drive that contains the Voice Files. The Directories list displays the directories on the selected drive.

 Open the Directories list, and then select the directory that contains the Voice Files.

See Also

Voices
Sound Driver Installation
Panel Preferences

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