

File Garbage Can

A Windows program by [Denam Systems](#) to delete those sensitive files.

The following is a list of available topics:

[General](#)

[Program Menu](#)

Exit

This menu option allows you to quit the program.

Help Menu Selection

This menu selection takes you to this help file.

Denam Systems is the one that brought you this program.

We would be more than willing to custom design a program for you. Contact us for details.

Freeware

Freeware is software that the author is giving away. It doesn't cost you anything. "Garbage Can" is **NOT** Freeware.

Commercial Software

Commercial software is the high priced stuff but not necessary high powered . Sometimes it fits your needs and sometimes it doesn't. Most of the time, you don't get a chance to take it for a test drive before you plunk down your bucks.

General

[Introduction](#)

[Disk Format](#)

[DoubleSpace](#)

[Basics](#)

[Archived File](#)

[Boot Time](#)

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["File Manager" Extension](#)

[Disclaimer](#)

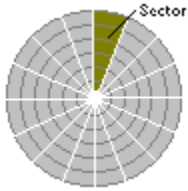
[Upgrades](#)

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[Contacting Us Through EMail](#)

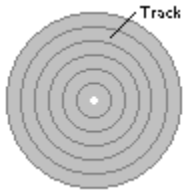
[Garbage Can Registration](#)

Sectors



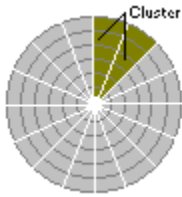
Your disks are divided into pie shaped sections called sectors. All sectors hold the same amount of data - typically, 512 bytes for diskettes and most hard disks. The number of sectors on the disk is set by the operating systems and will vary, depending on the type of disk drive.

Tracks



When your disk is formatted, the operating system arranges it into tracks. Tracks are ring shaped, similar to a phonograph record. The tracks help the disk operating system determine where files are located.

Clusters



Clusters are combinations of sectors and are the smallest amount of space that the operating system will use when a file is saved on the disk. The total sectors/cluster is determined by the type of disk. For example, some disks use 2 sectors/cluster while other disks may use 8 sectors/cluster.

Let's assume your disk uses 2 sectors/cluster and each sector is 512 bytes in size. Therefore, each cluster will be 1024 (512×2) bytes in size. If you save a file that is 100 bytes in size, the file will occupy 100 bytes of the 1024 byte cluster. The remaining 924 ($1024 - 100$) bytes is a dead space called slack and can **NOT** be used by any other file.

Slack



Slack area is a section of a disk that is filled with random bytes of information. This occurs when a file is saved, that is less in size, than the cluster size. This is a dead zone, that can **NOT** be used by any other file.

Disk Format

When a disk is formatted, the operating system maps it into sections called tracks and sectors. These sections are used to find a particular location on the disk.

Because of the way that the disk is used, data is saved in chunks of space called clusters. Each cluster occupies a specific amount of space and this space is the smallest amount of area a file will occupy. Any unused space in the cluster is referred to as the Slack Area.

By now, you may be asking yourself, "Why should I care?" Well, if you are worried about the security of your data and files, you better.

After you save a file, the remaining Slack Area is filled with random information. This information comes from your computer. It could be anything that just happens to be laying around in memory. For example, it might be something as simple as a listing of your hard disk directory (what network hacker wouldn't love to have that information) or something as complex as your next years budget.

By default, "Garbage Can" deletes by file size and does not worry about the Slack Area. You can change this default setting though. Please refer to the DoubleSpace section for further information.

WARNING

While the disk format is pretty much set in stone, how a program operates is left up to the imagination of the programmer. Some programs may be leaving hidden data on your disk. For example, when you save a document, some editor programs create a new file before deleting the original file. Even though the deleted original file doesn't show up in a directory listing, the document is still on your disk until it happens to get overwritten.

DoubleSpace

DoubleSpace is a program that comes with the Microsoft MS-DOS 6 upgrade. It increases the amount of data you can save on your hard disk by 50 to 100 percent. It does this by compressing the data on the disk. Further information about this program can be located in your MS-DOS manual.

While DoubleSpace does **NOT** change the disk format, it does juggle the way data is saved on a disk. It returns a cluster size of 16 which would seem to indicate a file would occupy a minimum size of 8192 bytes (16 clusters X 512 bytes). In actuality, DoubleSpace uses a cluster size of 1 so a file occupies a minimum size of 512 bytes (1 cluster X 512 bytes).

Because of the way DoubleSpace and other utility programs act, it was decided that by default, "Garbage Can" would **NOT** be concerned about the Slack Area of a file but would merely act on the file size. You can change the default setting though, by making changes to the "Garbage Can" initialization file (GARBAGE1.INI or GARBAGEF.INI).

Load the GARBAGEx.INI file into a text editor (i.e. Windows Notepad). You should see the following:

```
[File Garbage Can For Win 3.1]
SecurityLevel=TopSecret
Minimized=Yes
ConfirmDelete=No
```

Now add the following line:

```
By512ByteSize=Yes
```

Your GARBAGEx.INI file should appear similar to:

```
[File Garbage Can For Win 3.1]
SecurityLevel=TopSecret
Minimized=Yes
ConfirmDelete=No
By512ByteSize=Yes
```

Save the changes and then restart "Garbage Can". Any deleted file will now be deleted by cluster size instead of the standard file size. This will take care of the Slack Area of any drive but is inefficient on a DoubleSpace drive. To remedy that problem, you need to add another line to the GARBAGEx.INI file. The line is:

```
DoubleSpaceDrives=
```

For example, in our hardware setup, floppy drives A: & B: are regular (non-compressed) drives while hard drives C: & D: are compressed with the DoubleSpace program. Since drives A: & B: are non-compressed, they use a standard cluster format to save data. Therefore, we have added the following line to the GARBAGEx.INI file:

```
DoubleSpaceDrives=CD
```

Our complete GARBAGEx.INI file looks like this:

```
[File Garbage Can For Win 3.1]
SecurityLevel=TopSecret
Minimized=Yes
ConfirmDelete=No
By512ByteSize=Yes
DoubleSpaceDrives=CD
```

(Note: the C & D in the line does NOT contain a colon (:) character.)

Set up this way, "Garbage Can" deletes files on our hard disk (C: & D: drives) in 512 bytes chunks but it checks the floppy disks (A: & B: drives) before deleting files by cluster size.

WARNING

If you make a mistake while editing the GARBAGEx.INI file and you identify a non-compressed drive as a DoubleSpace drive, a cluster may not be entirely cleared. Also, other compression programs (i.e. Stacker) or disk formats (i.e. Unix) may **NOT** use a cluster format for dealing with files. Problems such as these could result in valuable data on your disk being overwritten and DESTROYED. Please read our Disclaimer before making these changes.

If you are unsure of your setup, the safest way to use "Garbage Can" is to **NOT** add the

```
By512Byte Size=
DoubleSpaceDrives=
```

lines to the GARBAGEx.INI file. Set up this way, "Garbage Can" will still make deleted files, unrecoverable even though the Slack Area may still be causing you a security problem.

Garbage Can Registration

[Registering By Mail](#)

[Registering Through CompuServe](#)

Program Menu

File

Delete...

Exit

Options

Confirm Delete

Start As Icon

Use Shift Key

Can Color

Security Level...

Info

About

Shareware

Caveat Emptor

Registration...

Help

Hotkeys

Hotkeys (Accelerator Keys) are shortcuts to the normal menu functions. They allow you to enter a 1 or 2 keystroke combination that takes you directly to a "Garbage Can" function.

The following hotkeys are defined:

F1	Brings up this help file.
Del	<u>Delete</u>
Shift+Del	<u>Delete</u> (Use <u>Restricted</u> Mode)
Alt+X	<u>Exit</u>

Delete

When you select the "Delete" menu option, a file selection dialog box appears. From the dialog box, you can select the file you want to delete.

NOTE

This menu selection is **NOT** available in the canf16.dll version.

Caveat Emptor

The Caveat Emptor (Let the buyer beware) menu selection appears only if you are **NOT** using the "Program Manager" shell program (progman.exe) that Microsoft supplies with the Windows system.

Your installed shell program provides the base that the rest of your Windows applications operate from. You can change to other shell programs but if they are not 100% compatible, they may cause strange things to happen to other applications.

You can tell what shell program is being used by looking at your SYSTEM.INI file. For example, if you are using Microsoft's "Program Manager", you will find the line:

shell=progman.exe

We have made "Garbage Can" compatible with the Microsoft "Program Manager". If you are using an alternate shell program and experience a problem with "Garbage Can", please drop us a line, describing the problem and your setup. We may be able develop a solution.

Start As Icon

When this option is active (indicated by a checkmark in the menu) "Garbage Can" will run in the minimized (icon) form each time it starts.

NOTE

This menu selection is **NOT** available in the canf16.dll version.

About

This provides general information about the program, such as, production date, and copyright information.

Department of Defense

Security Level

The 'Security Level' indicates what type of function will be used to delete your files. The levels available are:

Restricted - This is the lowest level of security but the fastest acting. Your file will be deleted as if you used the DOS "Erase" command. Your file and its data may be recoverable using the DOS "Undelete" command.

Confidential - Any data in the deleted file is guaranteed **NOT** to be recoverable. The file name may be recoverable using the DOS "Undelete" command.

Secret - Any data in the deleted file is guaranteed **NOT** to be recoverable. The file name and file creation date are also scrambled. While the DOS "Undelete" command may determine that something once existed, there will be nothing worth looking at. Even the Slack Area is taken care of, if you have set options described in the DoubleSpace section.

Top Secret - This is the highest level of security and the slowest speed. It has the same characteristics of the 'Secret' delete **PLUS** adds the overwrite requirements of DoD standards, prior to the final overwrite of unclassified data.

Confirm Delete

When the "Confirm Delete" option is active (indicated by a check mark in the menu), you will be asked to confirm that you want to delete each file, before it is actually deleted.

When inactive, each file is deleted without confirmation.

Basics

When you save a file on a disk, the data is placed in a location, on the disk, called a track. The operating system then saves the track's location in the FAT (File Allocation Table). When you ask for the disk's directory, the operating system looks for the filename in the FAT, so it knows which track to read.

When you use the ordinary DOS or Windows file delete feature, the operating system marks the filename in the FAT as being unused but it does nothing with the data in the track. The data in the track remains intact until some other data happens to overwrite it.

There are many freeware, shareware, and commercial disk scanner programs that allow the user to directly read the tracks, while bypassing the FAT. You can just imagine how embarrassing or bothersome it could be, if some of your so-called, 'deleted data' was being viewed by the outside world.

Assuming you are using the "Secret" or "Top Secret" Security Level option, "Garbage Can" is guaranteed to make your data completely unrecoverable. Someone may be able to recover (using the "Undelete" DOS program) the filename but the data in the file is gone forever.

Shareware Info

This informs you that this program is Shareware and provides information on ordering the program.

Testing

You can test "Garbage Can" without having access to a disk scanner program.

Create a text file using the Windows "Notepad" program. Enter a couple of lines of text and save the file. Now delete the file using the Windows "File Manager" or the DOS "delete" command.

Now use the DOS "undelete" command to recover the deleted file. Reload the file into the "Notepad" program. You will find that the text you entered is still present.

Again, delete the file but this time, use "Garbage Can". Make sure the "Secret" or "Top Secret" Security Level option is active. Now use the DOS "Undelete" to recover the filename. When you reload the file into the "Notepad" program, you will find that the text lines you entered, are gone. This action works on **ANY** type of file.

Introduction

"File Garbage Can" is an application for Microsoft's Windows 3.1. It provides a way to make sure the files you delete are truly gone. It is marketed as Shareware so you get a chance to evaluate its usefulness before purchasing it.

Archived File

The "Garbage Can" archived file (GCxxxx.ZIP) contains several files. Most of them are self-explanatory but 3 of them could use some additional explanation.

CAN16.EXE

This is the extended version of "Garbage Can". It is designed to take advantage of Windows 3.1 "Drag & Drop" feature. You can drag files from the Windows "File Manager" program and drop them into the "Garbage Can" program.

CANF16.DLL

This is a DLL that is usable by Windows 3.1 users. It will attach itself as an extension to the "File Manager" program. It is a replacement for the "CAN16.EXE" program.

BWCC.DLL

This is Borland's DLL (Dynamic Link Library) that gives you the fancy looking "Chiseled Steel" dialog boxes. You can install this file in your WINDOWS\SYSTEM directory where it can be found by all programs that use this DLL.

File Manager Extension

The "CANF16.DLL" file is a **replacement** for the "CAN16.EXE" program. Once installed, the "Garbage Can" menu selections will appear in the "File Manager" menu. An icon will appear when the "File Manager" is run. You can then drag files from the "File Manager" into the icon.

To install the extension, you will need to edit the "File Manager" initialization file (**winfile.ini**). Load the file into the Windows "Notepad" editor and then either look for or add the following line:

[AddOns]

Now add the following line beneath the [AddOns] section:

Garbage Can=canf16.dll

You can add directory information to the line. For example, lets assume you placed the garbagef.dll file in a sub-directory named GC on Drive C: In this case, your line would appear like this:

Garbage Can=c:\gc\canf16.dll

When you have completed your additions, your winfile.ini file would appear similiar to:

[AddOns]

Garbage Can=c:\gc\canf16.dll

Now save your changes and restart the "File Manager" program.

NOTE

"File Manager" can have a maximum of **5** extensions added to it. If you have upgraded to DOS 6.2, you will probably find that an extension called "Tools" has already been added to "File Manager".

Windows Startup Folder

In Windows 3.1, you can place a program in a folder called 'StartUp'. Any program in this folder is automatically run each time the Windows system is started.

Boot Time

You can run the "Garbage Can" program every time Windows is activated by including that information in your WIN.INI file. To do this, edit the WIN.INI file with a text editing program (do not use a word processing program that will not save a file as an ASCII file).

Load the WIN.INI file and look for the 'Windows' section. In the 'Windows' section, add the following line :

run=can16.exe

Now the WIN.INI file will contain these two lines (plus a lot more lines).

**[Windows]
run=can16.exe**

After doing this, "Garbage Can" will automatically run each time Windows is activated.

For those of you that prefer the quick and easy method, you can drop the "Garbage Can" program into the 'StartUp' folder. This eliminates the process discussed above.

Shareware

This program is distributed as Shareware. This is a simple concept. Basically, we retain all rights to the software under the Copyright laws but allow distribution to your system to be done freely. You may look at, copy, etc. this type of software, but if you use it, you are expected to register.

The advantage of Shareware is real. You get a chance to test the software on your computer to make sure it is compatible with your system and to make sure it works to your satisfaction before you 'buy' it with your registration fee.

CompuServe

For help or for submitting suggestions, you can contact us by mail or phone but the best way we feel, is by contacting us through CompuServe Email. Mail has a long turnaround period and if you call, you may only get a recording. EMail will most likely get a quicker response.

We usually check in with CompuServe on a daily basis. We try to respond to your questions on the same day they are received. With EMail you don't end up playing phone tag and you can even ask CompuServe to notify you when the message has been delivered.

Please use the following addresses to send EMail to us:

Fax

503-363-0198

CompuServe

70405,1422

America Online

DenamHelp

Internet

70405.1422@compuserve.com

An additional benefit of being a CompuServe user is that you can register your "Garbage Can" program through CompuServe and have the registration fee billed to your CompuServe account.^{DEL}

Newest Version

You can always find the newest version of "Garbage Can" on CompuServe (CIS) and America Online (AOL).

CompuServe

GO WUGNET

after you have connected with CompuServe.

Since the names of the libraries change from time to time, we can not tell you exactly which library "Garbage Can" is in but you can search on the keyword:

DENAM

to help you find the file. You can also register your "Garbage Can" program by using CompuServe.

America Online

Go to the

DOWNLOAD

section and search on the keyword

DENAM

Disclaimer

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In no event will Denam Systems be liable for direct, indirect, incidental, consequential damages resulting from any function or defect in the software, even if Denam Systems has been advised of the possibility of such damages.

Upgrades

April 1995 (GC0495)

Add three addition desktop icons. This allows the user to select the color of the icon that will appear on the desktop. Include new registration procedures.

September 1994 (GC0994)

Change the Delete menu hotkey 'F3' to 'Del'. Change the menu to the *Windows User Interface Design Guide* standards. Add the Shift key function that temporarily resets the user set Security Level to the Restricted quick delete mode. Not released to general public.

July 1994 (GC0794)

Drop Windows 3.0 version. Create Garbage Can DLL (garbagef.dll) that will attach itself to the File Manager program as an extension. Add install program. Add another level of security that exceeds DoD requirements.

February 1994 (GC0294)

Add another level of security by adding code to take care of the Slack Area. Add DoubleSpace information to documentation.

September 1993 (GC0993)

Add another level of security to the Security Level feature. Remove command-line feature. Add initialization file (garbage.ini) feature that replaces the need for command-line.

August 1993 (GC0893)

Do some clean-ups. Make minor change to Security Level feature. Add help file but then forget to include it in the ZIP file.

April 1992 (GC0493)

Change to updated BWCC.DLL file.

October 1992 (GC1092)

First upgrade of program. Add Windows "Drag & Drop" feature.

1991

First release of program.

Registering Garbage Can by mail

You can register this program by merely printing out the order form and sending the required payment. You can print the form by going to the [Order Form](#) topic and then selecting the 'Print Topic' option of the 'File' menu selection.

You can also [register "Garbage Can" by using CompuServe](#) and having the registration fee billed to your CompuServe account.

Registering Garbage Can through CompuServe

You can register your "Garbage Can" program through CompuServe's Shareware Registration Program by typing:

GO SWREG

after connecting with CompuServe. Then just follow their instructions. You can do a search on the keyword:

DENAM

to help you find the correct registration form. Once you have completed the form, the registration fee will be billed to your CompuServe account.

You can also register "Garbage Can" by mail. You want to make sure you do order by mail, if you are registering 5 or more programs, since there is a discount for large quantity orders.

Order Form

From:

Remit to:

Denam Systems
1115 Madison St NE
Suite 226
Salem, Oregon 97303

Contact Individual

Email Address

Quantity of Computers

Per Computer

1-4	\$19.95
5-9	\$17.95
10-14	\$15.95
15-19	\$13.95
20+	Agreed Price

Qty

Per Computer

Total

____ Garbage Can Software X _____ =

Note that GC0495 Software has been delivered and accepted by the customer.

Can Color

This menu selection allows you select the color of the Garbage Can program icon that will appear on the desktop.

Use Shift Key

If this menu option is active (indicated by a checkmark), pressing the Shift Key, prior to deleting a file, will **temporarily** reset your security level, to the **Restricted** mode. This allows for a quick delete of a non-sensitive file.

If this option is inactive, the Shift Key does **not** affect the security level.

WARNING

Because of the way that the Windows system works, this program may pick up the press of the Shift Key in another application that is running. This could cause a sensitive file to be deleted in the **Restricted** mode.

Registration

By using this menu selection, you can enter your registration number you received when you registered your program. This number will disable the nag screen that appears in the non-registered version.

NOTE

This menu selection will not appear after you enter you number.

