PCX DUMP

Version 7.10

THE screen capture program
Documentation and technical notes

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Copyright 1991-1992 by
Jesper Frandsen
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Email address: jesperf@daimi.aau.dk

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OVERVIEW OF PCXDUMP

PCXDUMP is a program which saves the images on the screen of your IBM Personal Computer or compatible PC to a disk file.

PCXDUMP is memory-resident, which means that having executed it once the program is always waiting in the background, while you continue to run other programs. You tell PCXDUMP to capture the image currently displayed on the screen by pressing a combination of keys which PCXDUMP reserves for itself.

The saved images are put on the disk in the PCX-format. A large variety of word processors, desktop publishers and paint programs are capable of importing PCX-files, e.g. WordPerfect, PageMaker, Ventura Publisher, PaintBrush and many, many more.

If you want another format (e.g. GIF), use a converter program like the GRAPHIC WORKSHOP or ALCHEMY (available via anonymous ftp from "wuarchive.wustl.edu" or "wsmr-simtel20.army.mil").

Also included in the package is a utility, PCXVIEW, which will show all the images that PCXDUMP can produce (2, 16, 256 or 16.7 million color PCX-files) on any EGA, VGA or SVGA display adapter.

9 GOOD REASONS TO USE PCXDUMP

- The price. PCXDUMP will cost you only 25.00 $.
- The size. PCXDUMP will use only 12.3 Kb of conventional memory (and no EMS or XMS) and it can be loaded high in the UMB.
- The speed. ALL pixel are written/read directly in the video memory and hence really fast!
- PCXDUMP recognizes a large number of SuperVGA chips, and is able to use their resolutions as well.
- It's user friendly. PCXDUMP can be installed with a on-screen menu, where you can install PCXDUMP the way you prefer. In the menu you can change things as: the hotkey-sequence to activate PCXDUMP, where to put the PCX-files, your type of videocard (PCXDUMP autodetects the videocard) and several other features.
- Easy to use. Just press the hotkey and use the mouse or keyboard to choose which part of the screen to save. PCXDUMP dumps the images directly to the PCX-format.
- PCXDUMP offers several ways of "delaying" the installation. Read about it in the "**PCXDUMP INSTALLATION**" section. In short this means that you are able to capture screens, which you normally wouldn't be able to capture.
- A lot of (particularly new) games push the EGA or VGA-card to the limit and use undocumented videomodes to get smooth scrool and smooth animation. PCXDUMP recognizes these modes. However, as the registers are write-only (can't be read) on EGA-cards, PCXDUMP can neither detect nor use these modes on EGA-cards. But on VGA-cards or better ALL these modes will be detected! Even if these modes includes a splitscreen configuration (like the shareware version of 3D Wolfenstein game from Apogee)!

- And last, but not least. It's not crippled in any way. PCXDUMP is designed to capture graphic screens and will work with no limitations in graphics modes. But if you register PCXDUMP, you will get the "text capturing" function as a bonus !

PCXDUMP REQUIREMENTS

To use PCXDUMP, you will need:
- An IBM PC, XT, AT, PS/2, or 100% compatible computer;
- At least one floppy diskette drive; and
- The IBM-PC DOS (Disk Operating System), or MS-DOS, in a version numbered 2.0 or higher.

A Mouse Systems compatible mouse will also be convenient.

You can use PCXDUMP with either a color or a monochrome EGA or VGA display card (and naturally with a SuperVGA display card).

WHAT PCXDUMP CAN CAPTURE

PCXDUMP is capable of capturing graphic images on systems equipped with any of the following video display adapters:
- Multicolor Graphics Adapter (MCGA)
- Enhanced Graphics Adapter (EGA)
- Video Gate Array adapter (VGA)

Although PCXDUMP can dump images from mode 4,5 and 6 (which are CGA-modes), you will need at least an EGA or MCGA card to install PCXDUMP.

No Hercules support, sorry!

PCXDUMP captures all of the video modes listed in the following table, which have been standardized by manufacturers of the various video adapters mentioned above:

Video mode	**Graphics resolution**	**Colors**	**Adapters supporting**
04	320 x 200	4	CGA/EGA/VGA *)
05	320 x 200	4	CGA/EGA/VGA *)
06	640 x 200	2	CGA/EGA/VGA
13	320 x 200	16	EGA/VGA
14	640 x 200	16	EGA/VGA
15	640 x 350	2	EGA/VGA
16	640 x 350	16/64	EGA/VGA
17	640 x 480	2	VGA/MCGA
18	640 x 480	16/256k	VGA
19	320 x 200	256/256k	VGA/MCGA

*) In these two CGA-modes, PCXDUMP will always be using a palette of Black, Cyan, Magenta and White.

And if you have any of the following SVGA-cards, you are able to use PCXDUMP in their SVGA-modes as well!

CHIPSET	16 Colors	256 Colors	32768 Colors
ATI-WONDER	1024 x 768	1024 x 768	640 x 480
TRIDENT	1024 x 768	1024 x 768	-
GENOA	1024 x 768	800 x 600	-
PARADISE	1024 x 768	1024 x 768	800 x 600
TSENG ET 3000	1024 x 768	800 x 600	-
TSENG ET 4000	1024 x 768	1024 x 768	-
TSENG HiColor	1280 x 1024	1024 x 768	800 x 600
OAK-37	800 x 600	-	-
OAK-67	1024 x 768	800 x 600	-
VIDEO-7	1024 x 768	800 x 600	-
CHIP & TECH.	1024 x 768	800 x 600	-
AHEAD A/B	1024 x 768	1024 x 768	-
VESA	1280 x 1024	1280 x 1024	-

PCXDUMP is not designed to work with high-resolution 4-color images.

If you try to activate PCXDUMP in an unsupported video mode, PCXDUMP will produce a long deep tone.

HOT-KEYS

When PCXDUMP is installed, these hotkeys can be used:

- ALT+SHIFT+C dumps a color PCX-file
- ALT+SHIFT+E dumps the whole screen in colors (dumps immediately)
- ALT+SHIFT+N dumps a black/white PCX-file
- ALT+SHIFT+R dumps the whole screen in black/white (dumps immediately)
- ALT+SHIFT+I dumps an inverted black/white PCX-file
- ALT+SHIFT+G dumps a color PCX-file, where image is gray scaled.
- ALT+SHIFT+H dumps a color PCX-file, where image is inverted gray scaled.
- ALT+SHIFT+T will dump a text screen to a TEXT-file.
- ALT+SHIFT+A will dump a text screen to a ANSI-file.

When dumping a color PCX-file, the screen mode (the available colors on the screen) determines which file format should be used (16, 256 or 32768 colors), except dumping a gray scaled dump in 32768 will produce a 256 color PCX-file. PCXDUMP will beep once when activated and (once) again when having finished dumping graphics. If you activate PCXDUMP in an unsupported videomode, such as a 4 color hires mode, PCXDUMP will emit a long low-pitched sound.

You can only use the **C, E, G & H** hotkeys when there's at least 4 colors on the screen. You can only use the **T** and **A** hotkeys in text mode (registered version only).

It's possible to define your own hotkey, read about it in "**PCXDUMP INSTALLATION**"

NOTE: if you activate PCXDUMP in text mode, PCXDUMP will dump the screen immediately.

TEXT MODES

The registered version of PCXDUMP holds a bonus facility which enables you to capture screens in these text modes:

Video mode	Text resolution	Colors	Adapters supporting
03	80 x 25	16	EGA/VGA
03	80 x 43	16	EGA
03	80 x 50	16	VGA
07	80 x 25	2	EGA/VGA
07	80 x 43	2	EGA/VGA
-	132 x 25	16	Some SVGA-cards
-	132 x 28	16	Some SVGA-cards
-	132 x 44	16	Some SVGA-cards
-	80 x 60	16	Some SVGA-cards
-	80 x 66	16	Some SVGA-cards
-	100 x 60	16	Some SVGA-cards

Text screens can be captured in three ways, either to a **text-file** (.TXT) to an **ANSI-file** (.ANS) or to a **bitmap** (graphic) file (.PCX).

To dump a text screen to a text file, press hotkey ALT+SHIFT+T and PCXDUMP will dump the screen immediately. Instead of the PCX extension on the file it will be the TXT extension. These text files can be imported to almost any kind of wordprocessor or desktop program. When you dump to a text file, all characters will be light gray on black background.

To dump a text screen to a ANSI-file, press hotkey ALT+SHIFT+A and PCXDUMP will dump the screen immediately. Instead of the PCX extension on the file, it will be a ANS extension. These ANSI-files can be typed (with the DOS command TYPE) and the correct colors (if any) will be printed on the screen, if you have the device driver ANSI.SYS installed (if not consult your DOS manual on how to install this device driver). This option is great for SysOp's, who wants to capture text screens with colors for use on their BBS.

All other hotkeys will produce a bitmap file (with the PCX extension). In all modes except mode 07, you can capture the screen in both color or monochrome. In text mode, PCXDUMP uses the RAM resident font to convert the screen into a bitmap. This means that the resulting bitmap represents the captured text screen exactly as it appears on the screen, even if the program loads a specialized font (such as an emulated mouse cursor in text mode).

Note that with Ventura Publisher or WordPerfect 5.1 the size of the image when incorporated into your document is dependent on the size of the frame (VP) or figure (WP). For best results, you must adjust this size (within VP or WP) so that pixels are not truncated or compressed. You can calculate the best size for the image in your document based on the horizontal and vertical resolution of your printer. Lets say you capture a VGA text mode screen with 80 columns and 25 lines. The font size in this mode is 8 by 16 pixels. This means that there are 400 (16 times 25) scan lines in the image and 640 pixels horizontally (80 times 8). You must size the image so that the number of pixels in the image is evenly divisible by the printer resolution. Therefore, if you have a laser printer or DeskJet printer which prints at a resolution of 300 dots per inch (both horizontal and vertical), a frame size of 2.13 inches by 1.33 or 4.27 inches by 2.67 inches would produce non-distorted output.

Remember that you must account for the inside border space and border width when sizing figures in WordPerfect.

ADJUSTING FRAMESIZE

If you have a mouse and your mouse-driver is installed, you are able to cut out part of the screen with a on-screen frame controlled by the mouse. This can also be done by using the arrowkeys and <SPACE>.

It is only in graphics mode that you are able to cut/clip. In text mode the whole screen will be saved immediately.

The size of the frame is shown in upperleft corner.

- MOUSE
  Press RIGHT button and move mouse to control frame-size.
  Press LEFT button and move mouse to control frame-position.
  Press MIDDLE button to adjust horizontal panning [1]

- KEYBOARD
  Press the arrowkeys to control frame-size.
  Press <SPACE> and the arrowkeys to control frame-position.
  Press Keypad 5 to adjust horizontal panning.

- BOTH MOUSE and KEYBOARD
  Press <ENTER to dump graphic within frame. Press <ESC> to cancel

You can only adjust the framesize when you have pressed one of these hotkeys: **C,N,I,G,H**.

NOTE: for EGA card users: Just a piece of advice. If you capture a screen in a program (e.g. a paint program) which is also using the mouse, "noisy" pixels may appear when the

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1 **Horizontal panning**. Some programs/games uses horizontal scrolling to improve the graphics. PCXDUMP will know which part of the graphics is currently shown, except for a "few" pixels (1-7 pixels). There is no way to determine these "extra" pixels in a safe way. If you can see that the frame start to the left of the screen, press the middle mousebutton or Keypad 5 to make the frameposition correct. In 16 colors mode can the frame be up to 7 pixels wrong, in 256 colors up to 3 pixels wrong. You can only adjust horizontal panning if the program uses horizontal scroll.

mouse is moved. If you dump the whole picture without using the mouse (hotkey E & R) and use PCXVIEW to show the PCX-file, you can now use the mouse to cut out the exact area.

HOW FAST IS PCXDUMP ?

Direct memory read/write will be performed in ALL modes: 2, 4, 16, 256 and 32768 colors mode. So this program is pretty fast !! I am using a 386sx/20 Mhz system (and a Tseng ET4000 card), and these are my measurements:

Picture size	**sec (approx.)**
320 x 200 x 256	1 - 1.5
640 x 480 x 256	6
800 x 600 x 256	9
1024 x 768 x 256	14
640 x 480 x 16	11
800 x 600 x 16	17
1024 x 768 x 16	27
640 x 480 x 32768	23

Because it is more complicated to read and write pixels in 16-colors mode it takes a little longer than in 256 colors mode..

Due to the 24-bit coding in PCX-files, capturing of graphics in 32768 colors mode involves 3 readings of every pixel and is therefore making capturing of these modes slower than that of the corresponding mode with 256 colors.

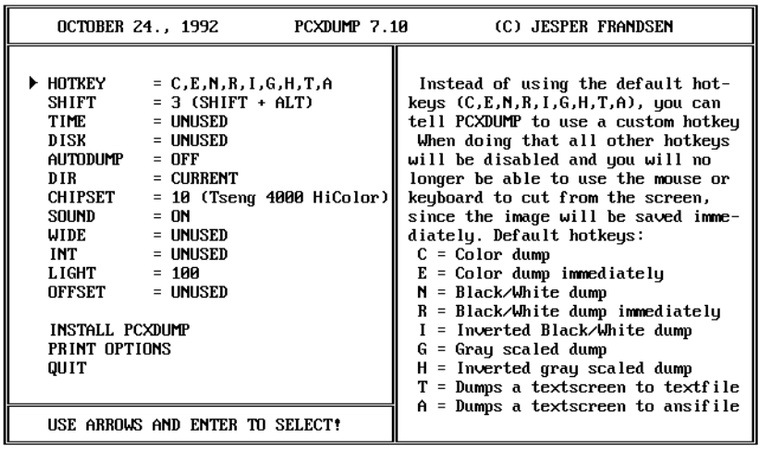
If the picture is a simple one, PCXDUMP will be faster since it needs to write less information to the disk.

IF THE COMPUTER IS TOO BUSY TO CAPTURE

There may be times where you request PCXDUMP to capture your screen, and where nothing seems to happen. This is usually because the foreground application program is in the middle of a sensitive task which cannot be interrupted.

In these cases, PCXDUMP is aware that you have requested a screen capture, and will pop up as soon as it becomes safe to do so.

PCXDUMP INSTALLATION



PCXDUMP installation menu.

PCXDUMP is easily installed with the menu that appears, when you write "PCXDUMP" + <ENTER>.You can, however, install PCXDUMP with "command line switches" alone. In this way you will be able to install PCXDUMP from a batchfile, such as AUTOEXEC.BAT.

This section identifies the "command line switches" which PCXDUMP recognizes and responds to. A command line switch is a string of characters which you type after the PCXDUMP command itself.

The purpose of these switches is to allow you to modify the way PCXDUMP performs certain of its operations. Turning PCXDUMP's beep sounds off and removing PCXDUMP from the memory are just two examples of functions, which the command line switches allow you to control.

A single command line may contain as many switches as you desire, in any order, in either uppercase or lowercase letters. Please note that DOS limits the maximum line length to 127 characters.

Option: /ON

Usage: PCXDUMP /ON

Installs PCXDUMP. This option is only necessary if no other options are given.

Option: /OFF

Usage: PCXDUMP /OFF

This option removes PCXDUMP from the memory.

Do not use this switch if PCXDUMP was not is the last TSR loaded. If another resident program was loaded AFTER PCXDUMP and you use this option, memory may become messed up and you may have to reboot.

Option: /NOSOUND
Usage: PCXDUMP [other options] /NOSOUND

Tells PCXDUMP to be quiet.

Option: /TIME=number[1]
Usage: PCXDUMP [other options] /TIME=number

Use this option to "delay" the installation of INT 09h.

Use this option to "delay" the installation of INT 09h. Many programs (e.g. games like "4D STUNT DRIVE") will take complete control of INT 09h at upstart (INT 09h is the hardware keyboard interrupt, remember) and never calls the original INT 09h. For that reason PCXDUMP's own INT 09h will not be called. This obstacle can be overcomed by using the /TIME option. If it takes your program, say, about 20 seconds to start up, it's a good idea to delay the installation about 30 seconds. PCXDUMP uses the hardware clock interrupt at INT 08h to keep track of time.

Example:

```
PCXDUMP /time=60
```

Will install PCXDUMP, and PCXDUMP will be waiting 60 seconds before grabbing INT 09h.

Bear in mind that when you use this option, you are not able to use PCXDUMP after exiting the program (or game) you wished to save images from. The reason for this is that the interrupted program remembers the "old" INT 09h address, and when you exit this program it restores INT 09h and thereby overwrites your INT 09h address. But since you now have saved all the images you wanted, you couldn't care less.

If you want to use PCXDUMP again, you do not have to reboot: remove PCXDUMP from the memory by writing:

```
PCXDUMP /OFF
```

and then install PCXDUMP again.

Option: /DISK=number
Usage: PCXDUMP [other options] /DISK=number

This is another way to "delay" the installation of INT 09H.

In fact this option "delays" the installation of both INT 08h and INT 09h.

In some programs (I have seen this in the WING COMMANDER game) its not possible to gain access to the keyboard even with the /TIME option. The reason for this is that the WING COMMANDER game takes complete control of both INT 08h and INT 09h **without** calling the original interrupt procedures.

My way of handling this is a bit tricky and may be unstable, but this is the only way I have come up with so far:

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1 When using the /TIME or /DISK options to delay the installation, PCXDUMP will now beep twice when it installs itself. This is a great help, since you now will know if was possible for PCXDUMP to take over INT 09h.

Instead of counting how many seconds it takes before the program is ready, you count how many times the program reads from the disk during startup (that is: how many times INT 13h is called). I have included a tiny TSR-program that counts exactly how many times INT 13h is called. This program is GETINT13.

You run GETINT13, start the program you wish to save images from. When it is loaded, exit the program. Back in the DOS again you press the hotkey to activate GETINT13 -> ALT+SHIFT+2 and GETINT13 will tell you how many times INT 13h was called.

Example:

When I wanted to save the logo from WING COMMANDER, I did this:

C:\>GETINT13 +<ENTER>

C:\>WC +<ENTER>

to start WING COMMANDER.

As soon as possible I quit WING COMMANDER by pressing ALT+X (I think). Back in DOS again I pressed ALT+SHIFT+2 to see how many times INT 13h has been called (about 190 as I remember). I then installed PCXDUMP:

C:\>PCXDUMP /DISK=150 /SHIFT=0 /HOTKEY=14

and started WING COMMANDER again.

When the logo appeared I pressed BackSpace which was the new hotkey for PCXDUMP. Well back in DOS again, it was no longer possible to activate PCXDUMP (for the same reasons as with the /TIME option).

But you can remove PCXDUMP from the memory with the option /OFF and the reinstall PCXDUMP. Bear in mind that when using this option that although your computer can not be harmed in any way the risk for the computer to "hang" is present. But what the heck, at least you have now a chance to save your precious image.

As mentioned above, WING COMMANDER called INT 13h about 190 times, but I gave PCXDUMP the option /DISK=150. Remember that almost any program is loading a lot of data when started, at least it is loading itself. But some programs save some data when you exit, and sometimes COMMAND.COM needs to be read from disk again. Therefore use a smaller number than GETINT13 tells you, since GETINT13 counts the total number of calls to INT 13h.

Option: /AUTODUMP

Usage: PCXDUMP [other options] /AUTODUMP

This option has no effect unless it is used in conjunction with either the /DISK or /TIME option. If you install PCXDUMP with "/TIME=10 /AUTODUMP" this is what happens: after 10 seconds PCXDUMP will install its own keyboard routine and will immediately start dumping the screen in mode the screen is in. It is not possible to make a grey scaled auto-dump of a color image.

Option: /SHIFT=number

Usage: PCXDUMP [other options] /SHIFT=number

Instead of using the default hotkey sequence which is ALT+SHIFT+<some hotkey>, you can tell PCXDUMP to use any combination of the ALT, Left SHIFT and CTRL keys.

Number	Effect on hotkey sequence
0	No shift keys
1	Press (left) SHIFT
2	Press ALT
3	Press (left) SHIFT+ ALT
4	Press CTRL
5	Press (left) SHIFT + CTRL
6	Press ALT + CTRL
7	Press (left) SHIFT + ALT + CTRL

Option: /HOTKEY=scancode

Usage: PCXDUMP [other options] /HOTKEY=scancode

Instead of using the default hotkeys (C,E,N,R,I,G,H,T), you can tell PCXDUMP to use a custom hotkey.

When doing so all other hotkeys will be disabled and you will no longer be able to use the mouse or keyboard to cut out a piece of the screen. The image will be saved immediately and PCXDUMP will automatically determine to dump either a color or a monochrome image.

In Appendix A you will find a list of possible hotkey scancode.

If you don't have a standard keyboard or if you want to use a hotkey not listed in Appendix A, I have included a program SCANCODE which will help you.

Just run the program, press the key you want as hotkey and remember the scancode number (in decimal). Press ESC to exit the program. Use the scancode number you just saw when installing PCXDUMP.

Remember : the scancode must be in the range 1-88.

Option: /DIR=directory

Usage: PCXDUMP [other options] /DIR=directory

This option places the PCX-files (DUMP_000.PCX etc) in the specified directory instead of the current directory. Many programs have some data in other directories than the up-start directory, and this option saves you the trouble of tracking down the PCX-files after capturing the graphics.

Example:

PCXDUMP /DIR=C:\ (Will place files in C:\ )

PCXDUMP /DIR=C:\PCX\ (If C:\PCX\ exist then files will be put here)

Instead of writing /DIR=C:\PCX\ you can write /DIR=C:\PCX

Option: /WIDE=number

Usage: PCXDUMP [other options] /WIDE=number

If a program uses smooth scroll (that is, defines a virtual screen bigger than physical display), e.g. like the COMMANDER KEEN series, you can use the /WIDE option, and PCXDUMP will try to dump the virtual screen instead of the physical screen (which is default). Since PCXDUMP automatically determine the logical screen

width (which is bigger than the physical display width), but have no way of calculating the logical screen height, you here specify how many times higher than the physical display height the logical screen height is. Lets say you want to capture the full logical screen of COMMANDER KEEN 4. This game runs in 320x200 in 16 colors. You do not have to worry about the logical screen width, since PCXDUMP will take care of that (actually 512 pixels in this game). The logical screen height is approx. 600 pixels. Therefore, to dump the logical screen, you should install PCXDUMP with these options:

PCXDUMP /TIME=15 /WIDE=3 (since 200*3 = 600)

If you have access to this game you should try it! To have any effect, the WIDE values must be in the range 1-5.

NB: This option will not have any effect on an EGA card since registers on this card are write-only.

Option: /CHIPSET=number

Usage: PCXDUMP [other options] /CHIPSET=number

If PCXDUMP somehow fails to recognize your video adapter that you know is on the list, this is a way to force PCXDUMP to use it.

The number must be in the range 2-19:

Number	**Chipset**
0	Reserved
1	Reserved
2	EGA-card
3	VGA-card
4	ATI-VGA
5	Trident
6	Genoa
7	Paradise
8	Tseng ET 3000
9	Tseng ET 4000
10	Tseng ET 4000 HiColor
11	OAK 37
12	OAK 67
13	Video 7
14	Ahead A
15	Ahead B
16	Chips & Tech 451
17	Chips & Tech 452
18	Chips & Tech 453
19	VESA

Option: /INT=number

Usage: PCXDUMP [other options] /INT=number

Use this option if you want to call PCXDUMP from other programs. You must call PCXDUMP from your program via an interrupt, which you specify here. This interrupt may be any interrupt of the following list:

5	78	99	129	134	140	242	247
50	79	100	130	135	141	243	249
69	96	101	131	137	142	244	252
76	97	102	132	138	143	245	253
77	98	105	133	139	241	246, „ ,	

If you have chosen, say, interrupt 5, you can call PCXDUMP from you own program, if you enter this piece of code in your program:

Turbo Pascal 4.0 - 5.5 code:

```
Procedure DumpScreen(Function:word);
Var Reg : registers;
begin
  Reg.AX := $1234;
  Reg.BX := Function;
  Intr(5,Reg);
  Delay(60);   (* Remember this delay *)
end;
```

Turbo Pascal 6.0 code:

```
Procedure DumpScreen(Function:word);
Begin
  Asm
     MOV AX,1234h
     MOV BX,Function
     INT 5
  end;
  Delay(60);   (* Remember this delay *)
end;
```

Register AX must be $1234 or 1234h (hexadecimal), as this tells PCXDUMP that this interrupt is meant to dump the screen. PCXDUMP is not called directly, but will pop up (if it is safe to do so) within the next 6/100 of a second. If AX doesn't equal 1234h, PCXDUMP will ignore the interrupt and call the old interrupt. If you use interrupt 5 as the interrupt to call PCXDUMP and press the PrintScreen key which normally activates interrupt 5, PCXDUMP will not be activated since register AX is not $1234 (PCXDUMP will call the original interrupt which prints text screen to the printer).

Register BX holds the function, you want performed. BX = 0 equals first hotkey "C", BX=1 equals hotkey "E" etc. BX = 5 equals hotkey "G".

Therefore BX must be in the range 0-8 ("C" - "A").

Option: /LIGHT=number

Usage: PCXDUMP [other options] /LIGHT=number

This option can be used to control the light intensity of the palette. This will of course only have an effect on color PCX-files. A value of 100 is default, a value of 50 will the image half as bright as normally and a value of 200 will make the images twice as bright. This value must be in the range 20-500, otherwise it will be ignored. Lets say you want to dump a picture to a gray scale PCX-file so you can print it out on a laserprinter. You then discover that the printed image is too dark. Now just (re)install PCXDUMP will a new (and higher) LIGHT value. Thats all there is to it.

Option: /OFFSET=number

Usage: PCXDUMP [other options] /OFFSET=number

Normally PCXDUMP will save the images to files starting at offset 0000 (i.e. with the file "DUMP0000.PCX"). But by specifying a file-offset, you can tell PCXDUMP to save the images to files starting at a specific offset. If you install PCXDUMP with this option:

```
PCXDUMP /OFFSET=20
```

PCXDUMP will save the first image to the file "DUMP0020.PCX, the next image to "DUMP0021.PCX" etc.

REGISTRATION

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Registration of PCXDUMP is based on '**personal** usage'. Corporate or organizational users **must** register all copies used on an individual basis; a specific person (name) must be explicitly assigned to each registrant who will be provided with a new version of PCXDUMP where the name of the specified person will be seen to indicate registered usage. Registration grants a specific person (not a juridical person or corporate entity) the right to 'use' PCXDUMP.

Shareware distributors may distribute this program. The "per disk" charge may not exceed $8 and the shareware distributor will not change the above license agreement for the end user of PCXDUMP. End users are still required to register each shareware copy of PCXDUMP.

You may license multiple copies of PCXDUMP with discounts as follows:

No . of copies	**Price per copy**
1-10	US $25
11-50	25 % discount
51-100	40 % discount
101+	50 % discount
Site License	US $500

Discounts apply only to individual orders, they are not cumulative.

Registration entitles you to:

- Use all updates (shareware versions) at no cost.
- Receive registered updates at a reduced price.
- Receive free technical support by letter.
- A registered user may install PCXDUMP on more than one machine, provided he is the only user on each machine. The registration and license policy is similar to a book, which can be taken with you but used only by you.

WHERE TO GET PCXDUMP

The prices of the registered PCXDUMP system are subject to change after January 1st, 1993. The latest shareware issue of PCXDUMP, which includes the most up-to-date information on pricing and new features, is always posted for downloading in these places:

- **American users:**
  The mighty simtel base.
  FTP-address: wsmr-simtel20.army.mil in pd1:<msdos.graphics>
  and it's mirror-sites:
  FTP-address: wuarchive.wustl.edu in /mirrors/msdos/graphics
  FTP-address: oak.oakland.edu in /pub/msdos/graphics
  or through Public Software Library.

- **European users:**
  FTP-address: nic.funet.fi in /pub/msdos/graphics/graphics
  FTP-address: garbo.uwasa.fi in /pc/graphics

- **Danish users:**
  - JOSTI-BBS, Tlf: 47 38 05 24, N-8-1.
  - Prof ShareWare, Benløse Skel 4 G, 4100 Ringsted, Tlf: 53 61 90 42
  - Plus several other BBS around the country.

If this document is more than nine months old when you receive it, it might not be current. To make sure that you have the latest information on pricing and availability of new features, contact the author or look for the latest shareware release of PCXDUMP in one of the places listed above.

APPENDIX A

These are the codes you may use with PCXDUMP's "/HOTKEY=scancode" parameter to change the hotkeys.

Key	Code	Key	Code	Key	Code	Key	Code
A	30	1	2	F1	59	Keypad plus	78
B	48	2	3	F2	60	Keypad minus	74
C	46	3	4	F3	61	Keypad 5	76
D	32	4	5	F4	62	Space	57
E	18	5	6	F5	63	BackSpace	14
F	33	6	7	F6	64	Enter	28
G	34	7	8	F7	65		
H	35	8	9	F8	66		
I	23	9	10	F9	67		
J	36	0	11	F10	68		
K	37	'	41	F11	87		
L	38	-	12	F12	88		
M	50	=	13				
N	49	,	51	Tab	15		
O	24	.	52	Esc	1		
P	25	/	53				
Q	16	;	39				
R	19						
S	31	[	26				
T	20	]	27				
U	22	\	43				
V	47						
W	17						
X	45						
Y	41						
Z	42						

APPENDIX B (What is new?)

For those who are curious, Version 7.10 of PCXDUMP contains the following additions and improvements over previous versions.

Version 7.10

- The /WIDE option is improved. The syntax for this option is now /WIDE=number. Since PCXDUMP automatically determines the logical screen width (which is bigger than the physical display width), but have no way of calculating the logical screen height, you here specify how many times higher than the physical display height the logical screen height is. Lets say you want to capture the full logical screen of COMMANDER KEEN 4. This game runs in 320x200 in 16 colors. You do not have to worry about the logical screen width, since PCXDUMP will take care of that. The logical screen height is approx. 600 pixels. Therefore, to dump the logical screen, you should install PCXDUMP with:

  PCXDUMP /TIME=15 /WIDE=3 (since 200*3 = 600)
- New option /OFFSET=number. Normally PCXDUMP will save the images to files starting with the file "DUMP0000.PCX". But by specifying a file-offset, you can tell PCXDUMP to save the images to files starting with another file.
- Small improvements here and there.

Version 7.00

- All these new tweaked 256 color VGA-modes will be recognized! PCXDUMP is tested on 320x200, 320x240, 360x200, 360x240, 320x400, 400x250, 320x480 and 360x480 and it works! In all these modes, you can used the mouse to cut out like usual. The routine is a general detection routine so all other 256 color tweaked modes will also work.
- Some BGI-drivers for Turbo Pascal and Turbo C makes it possible to use tweaked modes in 16 colors, like 704x528 or 720x540. These modes are recognized now and PCXDUMP will use them like any other 16 color mode.
- Some advanced games uses splitscreen technique to implement a statuspanel on the bottom half of the screen (like 3D Wolfenstein or SupaPlex). PCXDUMP now knows how to handle splitscreens both in 16 or 256 colors.
- PCXDUMP will now pack 16 color modes to a 16-color PCX file instead of a 256 color file. It is possible to pack the data better this way (although slower).
- New hotkey 'A'. Registered users will be able to dump a text screen to an ANSI-file with the extension .ANS. These files contain all the necessary escape sequences and can be typed with the DOS command TYPE. This option is great for SysOp's, who wants to capture text screen which can be send through a modem with color information.
- I have included a new program in the PCXDUMP system: PCXVIEW. It is an easy-to-use PCX-file viewer and it is very fast! Showing PCX-files is about 2-3 times faster than with VPIC. It is able to show 2, 16, 256 or 16.7 million color PCX-files on any EGA, VGA or SVGA card. Check PCXVIEW.DOC
- New option /LIGHT=number. When you install PCXDUMP you can now adjust the palette intensity. When dumping a screen to gray scaled PCX-file it is often very convenient to make the image lighter before printing it out on your favorite laserprinter.

- The colors used to print the framesize and frame on the screen is now a lot better.
- You can now do a (normal or inverted) gray scale dump in 32768 colors modes.
- The /NOPEL option is now removed! If the program you want to dump graphics from uses horizontal scroll, you can now use Keypad 5 or the middle mousebutton to adjust exactly where to place the frame on the screen.
- Minor bug fixes (e.g. PCXDUMP will no longer "halt" the system on Tseng ET 3000 systems!).

Version 6.00

- PCXDUMP is now menu-controlled. All options, such as hotkeys and videoadapter can be seen and set on screen. This means that it is very easy to compose a complicated installation. It is still possible to install PCXDUMP via "command line switches".
- Two new hotkeys 'G' and 'H'. 'G' will convert the image to a gray scale image (provided the screen mode is color with at least 4 colors and at most 256 colors). 'H' will produce an inverted gray scale image.
- New option /WIDE. If a program uses smooth scroll (that is, defines a virtual screen bigger than physical display), e.g. the COMMANDER KEEN series, you can set /WIDE, and PCXDUMP will try to dump the virtual screen instead of the physical screen. This option will not have any effect on an EGA-card since registers on this card are write-only.
- New option /AUTODUMP. This option has no effect unless it is used in conjunction with either the /DISK or /TIME option. If you install PCXDUMP with "/TIME=10 /AUTODUMP" this is what happens: after 10 seconds PCXDUMP will install its own keyboard routine and will immediately start dumping the screen.
- A small sound improvement. No matter how fast your computer is, the beeps should now be of the same duration as on slower PCs.
- New option /INT=number. It is possible to use PCXDUMP from another program. You specify here which interrupt PCXDUMP must use, when called from another program.
- New hotkey 'T'. This hotkey enables registered users to dump a text screen to a text file.

Version 5.00

- If you install PCXDUMP with a delay with the /TIME or /DISK option, PCXDUMP will now beep when it takes over the INT 09h or/and INT 08h.
- It is now possible to capture graphics in virtually any program or game. I have had some problems with a number of Apogee game, such as Commander Keen and many commercial games, such as A10 Tank Killer V 1.5. or Lemmings. However, these programs represent different problems. Games such as Keen and Lemmings define a "virtual" screen, which is much bigger than the actual resolution. This is how they make the impressive smooth scrool in all directions. Games like A10 Tank Killer and many others (new ones) uses a trick to gain four video pages on a standard VGA display card to obtain smooth animation with page flipping. Needless to say, PCXDUMP will now work in these modes, but since detecting and manipulation of these special videomodes depend heavily on register readings/writings, PCXDUMP will not recognize these modes unless your videocard is at least a VGA-card. Reason: on an EGA-card, all registers are write-only!

- Actually some programs use a special mode (X) on a VGA-card: 320 x 240 x 256. This mode provides square pixels and 2 display pages on a standard VGA card. PCXDUMP is able to handle this mode as well. The most tricky game is BANANOID (a freeware game) that uses mode X, but defines a virtual screen about 500 pixels wide and with smooth horizontal scroll. PCXDUMP is now able of capturing screens from such nasty programs as well.
- A new option: /NOPEL. This option will prevent PCXDUMP to read a certain register on the graphics card. Reading of this register sometimes blanks the screen while PCXDUMP is dumping graphics (normally the screen reappears when PCXDUMP has finished). This register determines exactly where the screen starts if there is smooth scrool involved (in a 16 color mode). If you explicitly tell PCXDUMP not to read this register, PCXDUMP will dump a picture which is 8 pixels wider than the physical display. Later you can cut out precisely the part of the picture you are interested in.
- PCXDUMP will now recognize and use VESA-cards.
- All these new options will only use additional 400 bytes !
- The registered version of PCXDUMP will now capture all these SuperVGA hires text modes, such as 132x25, 80x60, 132x44 or 100x40 etc.

APPENDIX C (Statistics).

PCXDUMP 7.1 is tested and works great with these programs/games.

ProgramName	Options	ProgramName	Options
A10 Version 1.5	/Time=20	4D Boxing	/Time=30
4D Drive	/Time=30	Attack sub 688	/On
Autodesk Animator	/On	Autodesk 3D Studio	/On
Bananoid	/On	Battle Chess	/On
Blues Brothers	/Time=10	Budokan	/Time=30
California Games II	/Time=15	Commander Keen 4	/Time=15
Cosmo #1	/Time=15	Crystal Caves	/On
Das Boot	/Disk=60	Deja Vu II	/On
Dragon (Roleplay)	/On	DrawPerfect	/On
Elite Plus	/Time=30	Eye of the beholder	/Time=20
F117A	/On	F15	/On
Face Off	/Time=10	Flight Sim 4.0	/On
Goblins	/Time=20	Gunship 2000	/On
Hero's Quest	/On	Hill Street Blues	/Time=30
Historix	/Time=20	Hyper Speed	/On
Jetfighter II	/Time=30	Jumpman Lives	/Time=10
Keen Dreams	/Disk=50	Larrys Quest 1-5	/On
Lemmings II	/Disk=28	Links 386 Pro	/Time=300
Links Golf	/Time=60	Magic Pockets	/Time=20
Martian Memoran.	/On	Mean Street	/Time=15
Mutant N. Turtles II	/On	Paganitzu	/Time=45
PC Paint	/On	Police Quest 1-3	/On
Pushover	/On	Retaliator X29	/Disk=30
Secret Agent	/Time=15	SimEarth	/On
Space Quest 1-4	/On	Speedball II	/On
Stun Runner	/Time=15	Supaplex	/Disk=100
Terminator II	/On	Test Drive III	/Time=10
Thunderblade	/Time=30	Thunderstrike	/On
Ultima 6	/On	Ventura 2.0	/On
Viking	/Time=30	Willy Beamish	/Time=20
Wing Commander I	/Disk=150	Wing Commander II	/Disk=350
Wolfenstein 3D	/Time=15	Wolf Pack	/Time=20
WordPerfect	/On	Xenon II	/Time=20

Please note that you may need to add some to the /TIME option if you are a slow typist, or you have a slow computer or harddisk. The above values should work on 386 machines or better, if PCXDUMP and the corresponding game is started from the same batch file such as:

PCXDUMP <options>
<statement to start game>

APPENDIX D (Ordering Information).

To order by check:

Complete the order form on the next page and mail it with your check, payable to Jesper Frandsen and send your order to:

Jesper Frandsen
Fredens Torv 7, 2. Sal
8000 Århus C
DENMARK

To order by credit card:

You can use your Visa, MasterCard, American Express or Discover card to obtain the latest release of the registered PCXDUMP system, by ordering through the Public Software Library of Houston, Texas. Credit card orders are shipped directly by the author, usually within 48 hours after receipt by PSL. Please specify to PSL your choice of 5.25" or 3.5" diskette.

To order by credit card, contact PSL at one of the following numbers:

(800) 242-4775 (Toll-Free)
(713) 524-6394
CIS 71355,470 (CompuServe Mail)

Or, complete the order form on the next page, and mail it to:

Public Software Library
P.O. Box 35705
Houston, Texas 77235-5705
U.S.A.

Or, complete the order form on the next page, and "fax" it to:

(713) 524-6398 (FAX only)

If you are mailing your credit card order, please be sure to mail it to PSL, not to the author. Credit card orders mailed to the author will be returned.

Please note that the PSL telephone numbers and mailing address **are for ordering only**. For information about dealer pricing, volume discounts, site licensing, shipping, returns, latest version numbers or other technical information, contact the author at the address above.

No. of copies	**Price per copy**	**Upgrading prices**
1-10	US $25	US $10
11-50	25 % discount	40 % discount
51-100	40 % discount	60 % discount
101+	50 % discount	70 % discount
Site License	US $500	US $100

APPENDIX E (Order form)

Order form for PCXDUMP 7.10

I wish to license/upgrade _____ copy/copies of the latest release of the PCXDUMP system. I have enclosed the amount of money as indicated by the table on the previous page (Prices subject to change).

I would like the printed postscript version of the manual (22 pages) so I have enclosed extra $8.00 ____ Yes, ____ No

I have also enclosed extra $6.00 for shipping and handling.

Name _____

Company (if applicable) _____

Address _____

City _____ State _____ Zip _____

Country _____

I prefer: _____ 3-1/2" disk _____ 5-1/4" disk

For credit card orders only:

Circle one: Visa MasterCard American Express Discover

Card Number _____ Expiration: _____

Cardholder Name (please print) _____

Cardholder Signature _____

APPENDIX F (Danish users only).

Danske brugere af PCXDUMP Version 7.10 kan registrere sig direkte via postgiro. Dette er både billigere og hurtigere end med check (for dem uden check er det også meget nemmere).

For at registrere sig skal man indsætte et beløb, svarende til ens ordre (se nedenstående tabel) på:

Giro: 041 41 58

Jesper Frandsen
Fredens Torv 7, 2. Sal
8000 Aarhus C

Husk at angive antal kopier, samt ønsket disketteformat på indbetalingsblanketten !!!

Antal kopier	**Pris pr. kopi**	**Opgradringspriser**
1-10	150,- kr	50,- kr
11-50	25 % rabat	40 % rabat
51-100	40 % rabat	60 % rabat
101+	50 % rabat	70 % rabat

Ønskes en trykt manual (postscript version), vedlægges ekstra 35,- kr (markér også indbetalingsblanketten med "MANUAL").

Disse priser er gældende, uanset om betaling sker med check eller postgiro. **Læg venligst 20,- kr til prisen til dækning af diskette og forsendelseomkostninger !**

Med venlig hilsen

Jesper Frandsen
Fredens Torv 7, 2. sal
8000 Aarhus C
86-182206