PCX DUMP

Version 5.00

THE screen capture program
Documentation and technical notes

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Email address: jesperf@daimi.aau.dk

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You may use this program for a 10 **day trial period**. Should you find this program useful, you **must** register it; you will then be provided with the latest releases of the PCXDUMP system (see last section of this manual). The cost as of this writing is $25.00 U.S. per single-user license. When you register, you receive a copy of the latest registered version of PCXDUMP, plus any enhancements that have been added since this document was released.

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OVERVIEW OF PCXDUMP

PCXDUMP is a program that 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 after you start it, the program is always waiting in the background, while you continue to run other programs. You tell PCXDUMP to capture the image currently being displayed on the screen by pressing a combination of keys which PCXDUMP reserves for itself.

The saved images is 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.

The PCX-files will be put in the current directory unless specified (see the **/DIR=** switch under **INSTALLATION OPTIONS**), and named DUMP_000.PCX, DUMP_001.PCX etc. (up to DUMP_999.PCX).

If anyone wants the pictures in another format (eg. GIF), use a converter program like the GRAPHIC WORKSHOP or VPIC.

(available from "wuarchive.wustl.edu" or "wsmr-simtel20.army.mil")

9 GOOD REASONS TO USE PCXDUMP

- The price. PCXDUMP will only cost you 25.00 $.
- The size. PCXDUMP will use less than 10 Kb of conventional memory (and no EMS or XMS).
- The speed. ALL pixel writes/read are direct to the video memory and hence really fast!
- PCXDUMP recognizes a large number of SuperVGA chips, and are able to use their resolutions as well.
- It's userfriendly. Just press the hotkey and use the mouse or keyboard to control which part of the screen to save. Some capture programs requires the user to convert the output to a widely used graphic format like GIF or PCX. PCXDUMP converts the images directly to the PCX-format.
- It's flexible. You can customize the hotkeys to a hotkey of your own choice.
- PCXDUMP offers a couple of ways to "delay" the installation. Read about it in "**PCXDUMP INSTALLATION OPTIONS**". This means in short that you will be able to capture screens, which you normally wouldn't be able to capture.
- A lot of (specially new) games push the EGA or VGA-card to the limit and use undocumented videomodes to get smooth scrool and smooth animation. PCXDUMP will now handle these modes. However, since the registers are write-only (can't be read) on EGA-cards, PCXDUMP can not detect and use these modes, unless you have a least a VGA-card !
- And last, but not least. It's not crippled in any way. PCXDUMP is a program to capture graphic screens, and it will work in all the videomodes that it can handle. But if you register, 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.

Besides a Mouse Systems compatible mouse will 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 still need mininum an EGA or MCGA card to install PCXDUMP.

No Hercules support, sorry ! If anyone have a desperate need for using PCXDUMP on Hercules (mono) systems, please (e)mail me. Then **maybe** I'll think about it!

PCXDUMP captures all of the video modes listed in the following chart, 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 use a palette of Black, Cyan, Magenta and White.

And if you have any of these SVGA-cards, you will be able to use 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	1024 x 768	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 videomode, PCXDUMP will produce a long deep tone.

NOTE: On the TSENG HiColor card (and the other cards that can show 32768 colors), when you're capturing graphics in 32768 colors be aware that although VPIC is able to show 24-bit Targa pictures, it can't show 24-bit PCX (VPIC version 4.6). However I have seen ALCHEMY 1.5.1 (from Handmade Software, Inc.) show 24-bit PCX correctly.

TEXT MODES

In the registrated version of PCXDUMP, you will be given the bonus facility to be able 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

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 to 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.

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. For example lets say you capture a VGA text mode screen that has 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 it is 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 that 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.

NOTE: If you capture a color screen on a plain EGA card, the colors may not seem right when you try to view it. PCXDUMP dumps the color text-screen in a 256-colors PCX-file. Any program that shows 256 color files to an EGA-screen must try to find the best colors since EGA can only show 16 out of 64 colors. And if the program that you use to show the PCX-files isn't good enough, the result may be funny colors. A solution is to remap the PCX-files to 16 colors. This can be done with e.g. PICLAB or GRAPHIC WORKSHOP (both shareware).

HOT-KEYS

When PCXDUMP is installed, you can use these hotkeys:

- ALT+SHIFT+N gives a 2 color PCX-file
- ALT+SHIFT+I gives a inverted 2 color PCX-file
- ALT+SHIFT+C gives a 256 color PCX-file
- ALT+SHIFT+R dumps the whole screen in 2 colors (dumps immediately)
- ALT+SHIFT+E dumps the whole screen in 256 colors (dumps immediately)

PCXDUMP will give a beep when activated and (a higher) one when it has finished dumping graphics. If you activate PCXDUMP in an unsupported videomode, such as a 4 color hires mode, PCXDUMP will a long deep tone.

You can only use the **C** & **E** hotkeys when there's at least 16 colors on the screen.

It's possible change the hotkeys, read about it in "**PCXDUMP INSTALLATION OPTIONS**"

NOTE: if you activate PCXDUMP in a "tricky" video, like mode X (320x240x256) or in a mode with smooth scrool, PCXDUMP will dump the screen immediately. This is also the case in text mode (registrated version only).

ADJUSTING FRAMESIZE

If you own a mouse and have your mouse-driver installed, you will be 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 plus <SPACE>.

You will **only** be able to cut/clip in **graphics mode**. In textmode the whole screen will be saved immediately.

The size of the frame will be 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.

- KEYBOARD
  Press the arrowkeys to control frame-size.
  Press <SPACE> plus the arrowkeys to control frame-position.

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

You can only adjust the framesize, when using the **N**, **I** & **C** hotkeys.

NOTE: Just a piece of advice. If you capture a screen in program (e.g. a paint program) that also uses the mouse, sometimes there may come "noisy" pixels on the screen when you move the mouse. Instead you should dump the whole picture without using the mouse (hotkey **E** & **R**). Then use a program like VPIC to show the PCX-file, and now you can use the mouse to cut out exactly the area you need.

HOW FAST IS PCXDUMP ?

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

In 16-colors mode, things take a little longer, because it's more complicated to read and write pixels 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 therefore making capturing of these mode slower than other modes.

If it's a simple picture, things will go faster since PCXDUMP don't have to write so much information to the disk.

IF THE COMPUTER IS TOO BUSY TO CAPTURE

There may be times when you request PCXDUMP to capture your screen, but nothing, at first, 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 OPTIONS

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 switch options as you desire, in any order, in either uppercase or lowercase letters.

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.

Don't use this switch if PCXDUMP isn't the last TSR loaded. If another resident program is loaded AFTER PCXDUMP and you use this option, the memory may be messed up and you may have to reboot.

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

Tells PCXDUMP to turn off sound.

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

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

Many programs (e.g. games like "4D STUNT DRIVE") will take complete control over INT 09h at startup (INT 09h is the hardware keyboard interrupt, remember) and doesn't call the original INT 09h. For that reason PCXDUMP's own INT 09h routine will not be called at all. This obstacle can be overcome by using this option. If your program takes, 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
```

Installs PCXDUMP, and PCXDUMP waits 60 seconds before it grabs INT 09h.

Keep in mind that when you use this option, you will not be 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 the 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 don't 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) it's 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 over 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've come up with so far:

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 little TSR-program that count exactly how many times INT 13h is called. This program is GETINT13.

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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.

You run GETINT13, start the program you wish to save images from. When it's loaded, exit the program. Out 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 I could I quitted WING COMMANDER by pressing ALT+X (I think). Out in DOS again I pressed ALT+SHIFT+2 to see how many times INT 13h was 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's 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 re-install PCXDUMP. Keep in mind that you have to be a little desperate to use this option. Not that your computer can be harmed in any way but 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 you noticed, WING COMMANDER called INT 13h about 190 times but I gave PCXDUMP the option /DISK=150. Remember that any program will load a lot data when you start it, at least it loads itself, but doesn't save the same amount of data when exiting, so use a smaller number than GETINT13 tells you, since GETINT13 count the total calls of INT 13h.

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**,**R**,**N**,**I**), you can tell PCXDUMP to use a custom hotkey.

When doing that 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 whether to dump a color or monochrome image.

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

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

Just run the program, press the key you want as the 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 1-90.

If you try to install PCXDUMP when it's allready installed, you will hear a beep and the current hotkey combination will be display on the screen. You will also see the message: "PCXDUMP is already installed!".

Option: /DIR=directory
Usage: PCXDUMP [other options] /DIR=directory

This option will place the PCX-files (DUMP_000.PCX etc) in the specified directory instead of the current directory.

Many programs will have some data in other directories than the up-start directory, and this option saves you for 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 also write /DIR=C:\PCX

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

If PCXDUMP somehow fails to recognize your video-adapter, which 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	Unsupported
1	Reserved
2	EGA-card
3	VGA-card
4	ATI-vga
5	Trident
6	Genoa

7	Paradise
8	Tseng 3000
9	Tseng 4000
10	Tseng 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: /NOPEL
Usage: PCXDUMP [other options] /NOPEL

This option will prevent PCXDUMP to read a certain register on the graphics card (the horizontal pel panning register). Reading of this register sometimes blanks the screen while PCXDUMP is dumping graphics (normally the screen reappears when PCXDUMP is 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're interested in. This option has no effect, unless you have at least a VGA-card.

REGISTRATION

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.

> Although I will try to respond to your registration in 2-3 weeks, please allow up to 4-6 weeks delay to process your registration

ORDERING INFORMATION

The prices of the registered PCXDUMP packages are subject to change after January 1, 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 migthy simtel base.
  FTP-address: wsmr-simtel20.army.mil in pd1:<msdos.graphics>
  and it's mirror-site
  FTP-address: wuarchive.wustl.edu in /mirrors/msdos/graphics

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

If this document is more than nine months old when you receive it, it might not be current. To make sure 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.

You can use a check to receive latest release of PCXDUMP.

To obtain registered release of the PCXDUMP system, register by sending the order form next page with your check for $25.00 U.S. per copy, payable to Jesper Frandsen. See appendix D.

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

For those who are curious, Version 5.00 of PCXDUMP contains the following additions and improvements over previous versions.

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 met 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 represents different problems. Games such as Keen and Lemmings define a "virtual" screen, which is much bigger than the actuel resolution. This is how they make the impressive smooth scrool in all directions. Games as A10 Tank Killer and many (new) others uses a trick to gain four videopages on a standard VGA display card to optain smooth animation with page flipping. Needless to say, PCXDUMP will now work in these modes, but since detecting and manipulation of these special videomodes depends heavily on register reading/writings, PCXDUMP will only recognize these modes, if your videocard is a least a VGA-card. Reason: on an EGA-card, all registers in read-only, sigh! Besides, you won't be able to cut out part of the screen in the special modes: the screen will be saved immediately.
- Actually some programs uses 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 also. The most tricky game is BANANOID (a freeware game), which uses mode X, but defines a virtual screen which is about 500 pixels wide and has smooth horizontal scroll. PCXDUMP will now also capture screens from such nasty programs.
- 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 is 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're interested in.
- PCXDUMP will now recognize and use VESA-cards.
- All these new options will only use additional 400 bytes !
- The registrated version of PCXDUMP will now capture all these SuperVGA hires text modes, such as 132x25, 80x60, 132x44 or 100x40 etc.

Version 4.02

- It's no longer possible to use the mouse, while PCXDUMP is dumping data to a file!
- In 16 colors VGA text, PCXDUMP used a fixed palette, but will now use the correct colors, even if it's a custom colorpalette.

Version 4.0

- The registrated version of PCXDUMP 4.0 will now capture screen in textmodes. Both in color and black and white.

- Internal buffersize is now increased to 3600 bytes for better performance. PCXDUMP therefore uses more memory now than previous versions. This also turned out to be necessary to make PCXDUMP handle 32768 colors.
- Ahead A/B chipset is now recognized.
- The routine to recognized Chips & Technology chipsets are improved.
- On TSENG HiColor card, PCXDUMP can be used in the 1280x1024x16 mode incl. all modes with 32768 colors.
- On ATI-WONDER cards, PCXDUMP can be used in the 640x480x32768 colors mode.
- On Paradise cards PCXDUMP can handle the 640x480x32768 and 800x600x32768 modes incl the 1024x768x256 mode.
- PCXDUMP can now be used in CGA mode: 04h = 320x200x4, 05h = 320x200x4, 06h = 640x200x2. PCXDUMP however still requires minimum an EGA-card to install.
- It's now possible to adjust framesize without a mouse, using SPACE and the arrowkeys instead.
- PCXDUMP now releases the environment copy.
- Much better check for pop-up in busy situations. E.g. PCXDUMP will not pop up as long as INT 13h is active.
- The normal hotkey sequence is now ALT+SHIFT (left shift). Previous versions used ALT+CTRL as the hotkey sequence.
- There was a minor problem with the EGA-palette in mode 0Dh (320x200x16) and mode 0Eh (640x200x16). In these two modes the palette is a fixed 16 colors palette (and not as in mode 10h 16 colors out of 64). This is now fixed.
- PCXDUMP will now beep a low and long tone if the hotkeys is pressed in an unsupported videomode.
- PCXDUMP now reads command-line parameters.

  /ON is necessary to install PCXDUMP (only if none of the other options is used).

  /OFF will remove PCXDUMP from the memory.

  /NOSOUND tells PCXDUMP not to use sound.

  /TIME=number tells PCXDUMP to delay installation of INT 09h number seconds.

  /DISK=number tells PCXDUMP to delay installation of INT 08h by number calls to INT 13h. INT 09H will be installed 3 sec. after INT 08H.

  /SHIFT=number. It's now possible to choose between ALT, SHIFT and CTRL in the hotkey sequence.

  /HOTKEY=number. You can tell PCXDUMP to use you custom hotkey. All others hotkeys will be disabled. PCXDUMP will automatically determine whether to dump a color or monochrome image.

  /CHIPSET=number. Forced PCXDUMP to use a certain chipset. See PCXDUMP.DOC for details.

  /DIR=directory. Will tell PCXDUMP to put the PCX-files in this directory instead of current directory.

Version 3.80

- VIDEO-7 chipset is now recognized. CHIPS & TECH chipset is now recognized.
- The rutine to recognize TSENG ET3000 is improved.

- EGA-card is now accepted again !!! Eventually I got around the EGA-card palette problem. I am using a method to manipulate the "Video Save Pointer Table". It seems to work on GIF-pictures and all the programs I've tested so far, although I can't guarantee it to work in every program.
- In 2 colors mode, pixels read/write is now direct memory read/write. Dumping a picture i 2 colors mode is now approx. 500 % faster !!
- New HOTKEY: ALT+CTRL+R. This gives the ability to dump the whole screen in 2 colors immediately.

Version 3.70

- It is no longer possible to use PCXDUMP on a plain EGA-card-
- OAKTECH-37 chipset is now recognized.

Version 3.67-3.69

- Some internal improvements.

Version 3.66

- Corrected a stupid bug that caused the program to crash, if it was activated in textmode!

Version 3.65

- OAKTECH-67 chipset is now recognized.

Version 3.60

- Dumping a 16-color screen on a "standard" card is now MUCH faster.

Version 3.50

- Framesize is now written on screen. Hotkey ALT+CTRL+V is therefore removed.

Version 3.00

- Initial release on the net

APPENDIX C.

STATISTICS OVER PCXDUMP.

PCXDUMP works fine with these programs.

ProgramName	Options	ProgramName	Options
Police Quest 1-3	/On	Thunderblade	/Time=30
Space Quest 1-4	/On	F15	/On
Larrys Quest 1-5	/On	Thunderstrike	/On
Attack sub 688	/On	Gunship 2000	/on
Elite Plus	/Time=30	Links Golf	/Time=60
4D Drive	/Time=30	4D Boxing	/Time=30
Budokan	/Time=30	Wing Commander I	/Disk=150
Viking	/Time=30	Wing Commander II	/Disk=350
Ventura 2.0	/On	Hero's Quest	/On
Das Boot	/Disk=60	Deja Vu II	/On
DrawPerfect	/On	WordPerfect	/On
California Games II	/Time=15	Mutant N. Turtles II	/On
Jetfighter II	/Time=30	Hyper Speed	/On
PC Paint	/On	WolfPack	/Time=20
Test Drive III	/Time=10	Battle Chess	/On
Mean Street	/Time=15	Eye of the beholder	/Time=20
F 117A	/On	Dragon (Roleplay)	/On
Autodesk Animator	/On	Ultima 6	/On
Face Off	/Time=10	Terminator II	/On
A10 Version 1.5	/Time=20	Cosmo #1	/Time=15
Commander Keen 4	/Time=15	Blues Brothers	/Time=10
Willy Beamish	/Time=20	Supaplex	/Disk=100
Bananoid	/On	Speedball II	/On
Lemmings II	/Disk=28	Hill Street Blues	/Time=30
Goblins	/Time=20	SimEarth	/On
Historix	/Time=20	Jumpman Lives	/Time=10
Xenon II	/Time=20	Secret Agent	/Time=15
Crystal Caves	/On	Paganitzu	/Time=45
Wolfenstein 3D	/Time=15	,	

NB: All examples have been captured at a friend, since I really don't have that many programs or games.

APPENDIX D.

Send your order to:

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

I wish to license _____ copy/copies of the latest release of the PCXDUMP program. I have enclosed $25.00 for each single-user license, as indicated (Prices subject to change.)

I have also enclosed extra $4.00 for shipping and handling.

Name ____

Company (if applicable) ______________________________

Address ____

City ___________________________ State ______ Zip ________

Country ______________________

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