

# DosBox Manual by Howling Mad Murdock Version 1.9a

(still open for improvement and spell check)



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**NOTE:**     **The links to my files and others have not been updated for a long time. They may not be existent anymore.**

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## 1. Frequently Asked Questions – What do I need to know before I use DosBox 4 PSP?

### a. What games/applications run on DosBox 4 PSP?

Even though ([theoretically](#)) DosBox could actually emulate every DOS environment with any specifications and ergo should be able to run about 99 % of every game/app once coded for Dos, there are restrictions, not by DosBox, but by the PSP.

As a rule of thumb, one can say that a system needs ten times (10 x) the computing power to emulate a system, than the system is strong. This means that if you want to emulate a 33 MHz System at full speed, you need a processor of about 333 MHz to emulate such a system (including its sound, graphics and processor units). This leads us to the fact that a PSP can emulate a DOS computer of about the following specifications:

**CPU:** 33 MHz

**RAM:** max. 10 MB

**SOUND:** Creative Labs SoundBlaster/SoundBlaster 16, Adlib, etc. (pretty much everything)

**GRAPHICS:** VGA/EGA/CGA (possibly better, using VESA)

But again: These are only approximate values, some games requiring 33 MHz to run properly on a real computer still *might* not run at 100 % speed in the emulated environment of DosBox. Other games on the other hand, which require 50 MHz or more might run better than expected ... you can never tell beforehand ... you have to try! However, take these values as a rule of thumb!

### b. Can I run Windows 3.xx on my PSP?

Yes, you can. But there's a problem: You have to use an image to run it. Below, you can find a manual on how to do that.

### c. \*panting\* I wanna play my old Dos games! Which run and which don't?

As I said, you can't tell before you've tried them, but here are some games tested by me and/or which others have tried and claimed working.

**Update:** The list is no more up-to-date! DosBox has undergone some major changes and has gained a little speed improvement. Therefore, some of them may run faster than listed here, some may not run anymore due to changes in the code ... Warcraft for example runs slightly faster now. Anyway, take them as a guideline:

<b>Wolfenstein 1 &amp; 2:</b>	Run at 100 % speed
<b>Civilisation:</b>	Runs, playable, but not full speed
<b>Colonization:</b>	Runs, playable, but not full speed
<b>Gods:</b>	Runs at 100 % speed
<b>Commander Keen 1-7:</b>	Run at 100 % speed
<b>Lords of the Realm 1:</b>	Runs at 100 % speed
<b>Lords of the Realm 2:</b>	Runs, almost unplayable, ~30 %?
<b>Leisure Suit Larry 1-3:</b>	Run at about 100 % speed
<b>Leisure Suit Larry 4-6:</b>	Run, playable, but at "only" about 90 %
<b>Raptor:</b>	Runs at 100 % speed
<b>Warcraft:</b>	Runs, playable, but at about 70 %
<b>Eye of the Beholder 1-3:</b>	Run, playable, but not at full speed
<b>Space Quest 5:</b>	Runs, playable, but at about 70 %
<b>Jazz Jack Rabbit:</b>	Runs, playable, not at full speed
<b>Crime Fighter:</b>	Runs at 100 %
<b>Alien Breed 1:</b>	Runs at 100 %
<b>Alien Breed 2 –T.A.:</b>	Crashed after Team 17 Logo
<b>Cyber Bykes:</b>	Runs, but speed untested
<b>Jagged Alliance:</b>	Runs, still playable, but long loading & only 60 %
<b>Battle Isle:</b>	Runs at 100 %
<b>History Line 1914/18:</b>	Runs at about 100 %
<b>Lost Vikings:</b>	Runs at 100 %
<b>Prince of Persia 1:</b>	Runs at 100 %, but only recognizes Joystick (key combo)
<b>Prince of Persia 2:</b>	Runs at 100 %
<b>Xenon 2:</b>	Runs at 100 %
<b>Abuse:</b>	Runs, but unplayable, about 20-30 % only
<b>Dungeon Keeper:</b>	Crashes after Intro movie
<b>Populous 2:</b>	Runs at 100 %
<b>Heroes of Might &amp; Magic:</b>	Runs, playable at ~90 %
<b>King's Quest 5:</b>	Runs, but not at full speed
<b>Archon Ultra:</b>	Runs at 100 %, but no reaction to input ... unique error
<b>Settlers 1/Die Siedler 1:</b>	Runs, speed untested
<b>Settlers 2/Die Siedler 2:</b>	Runs, still playable, but at about 50 %, enable frame skip

## 2. Installing DosBox on your PSP

Since CrazyC, the coder of the DosBox Port for the PSP is releasing his new versions as “elf” files they need to be compiled into an eboot.pbp file before we can use it. The compiling is done by using the little application “elf2pbp”.



Do **NOT** try to just **rename** the files (as stated sometimes in forums) ... it's just **WRONG** and u **cannot execute** DosBox on the PSP by just renaming the file!

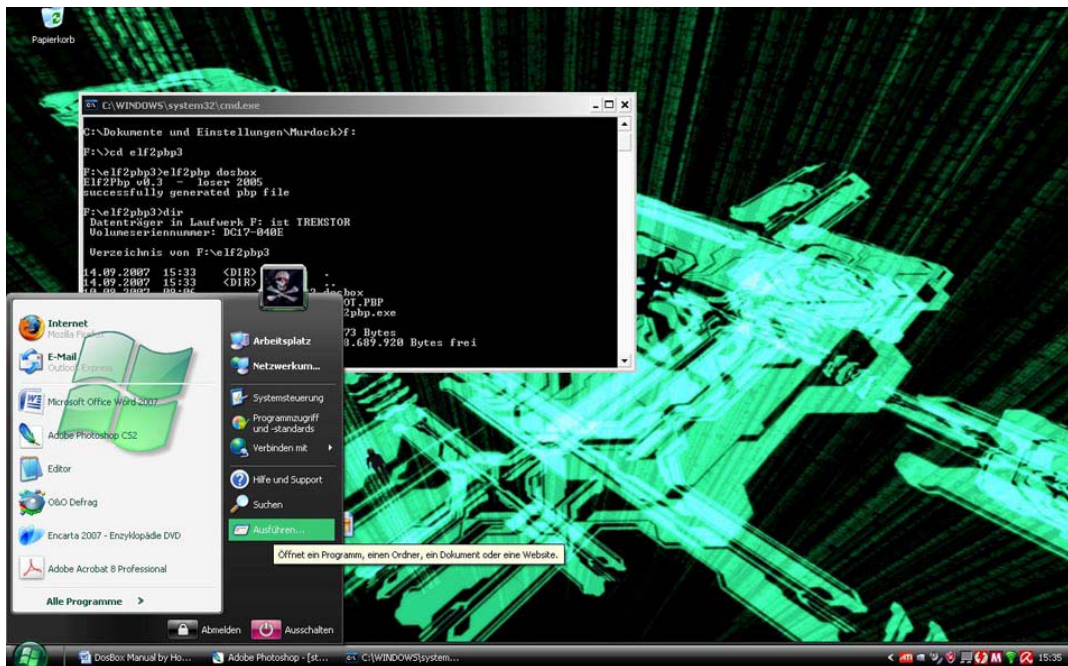
Since I had trouble finding this application, you can download it together with DosBox (release of approx. 10<sup>th</sup> of September) here:

[http://rapidshare.com/files/56706485/DosBox\\_Manual\\_1.2\\_DosBox\\_0.71.rar](http://rapidshare.com/files/56706485/DosBox_Manual_1.2_DosBox_0.71.rar)

Because I don't want any1 to steal this link, I protected it with a password, which is my name: “Murdock”. Unzip/unrar this file and you will see three folders, one of them called “elf2pbp3”. We need it, as the folder name indicates, to create our eboot.pbp file.

Okay, coming back to “*how to create an eboot.pbp from an elf file*”:

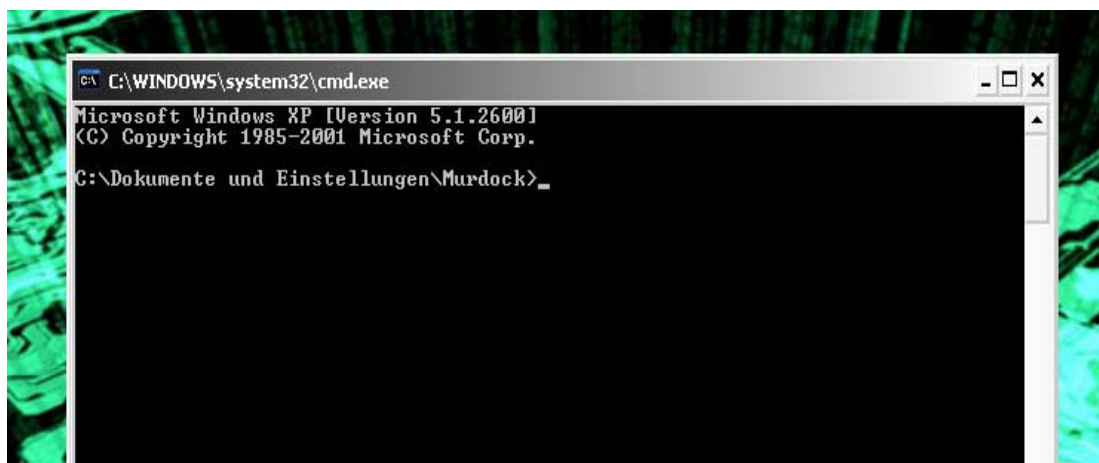
- a) You have to download CrazyC's release from here: <http://forums.ps2dev.org/viewtopic.php?t=3179>, two files are necessary, “dosbox” and “dosbox.conf”
- b) Then you have a file most likely called “Dosbox”, without any extension. Copy it into your “elf2pbp3” folder.
- c) next, hit “START” in your task bar of Windows and select “run ...” (I hope this is called like that in English, sorry, I use the German version of Windows ...) and type “cmd”.



- d) now you see a dos command prompt window. Use the commands “cd” to get to the folder you have your elf2pbp application in. Since some younger people here might have never used DOS before, I’ll explain it with an example:

I have stored this application in a folder on my g:\ drive. After you have entered “cmd” in the “run ...” window the new window appearing shows the dos prompt and you are in the “c:\documents and settings\username\” folder. “username” is not the real name of the folder, but there is usually written the name you’ve chosen during the logon. However, since my elf2pbp3 is stored on drive “f”, but we are now on “c”, we have to type g: and confirm this with ENTER. Now we are on “f:\”. To get into my elf2pbp3 folder, I have to type “cd elf2pbp3” in the prompt. Now, I am in my folder f:\elf2pbp3\.

The pictures added below illustrate what I just explained:



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Dokumente und Einstellungen\Murdock>f:
F:\>cd elf2pbp3
F:\elf2pbp3>_
```

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Dokumente und Einstellungen\Murdock>f:
F:\>cd elf2pbp3
F:\elf2pbp3>_
```

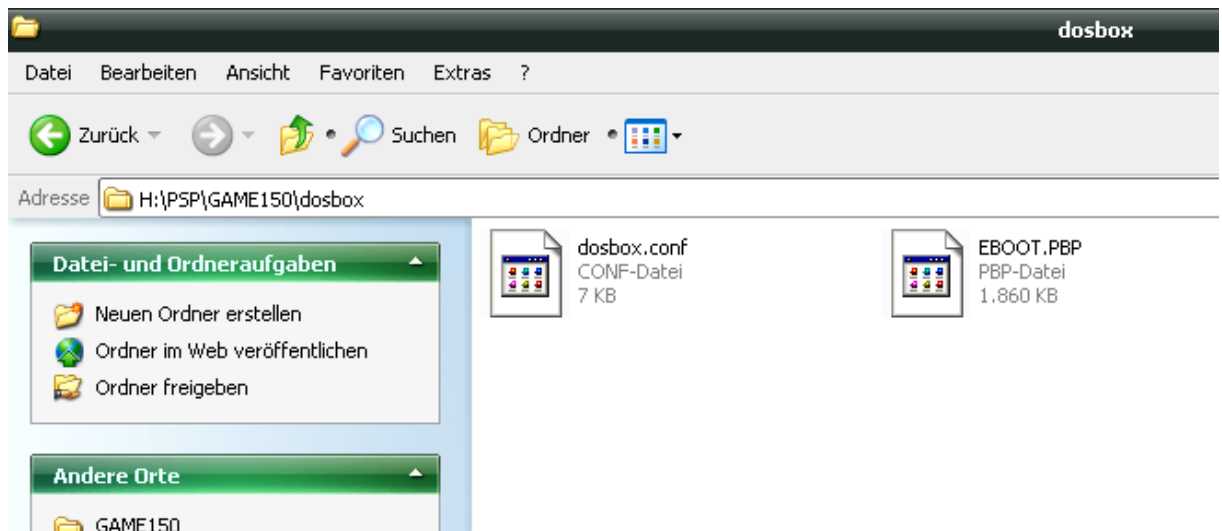
- e) Finally, we can use elf2php to get our eboot.pbp from the “dosbox” file: Type in the prompt “elf2pbp dosbox”. You will receive a message that you have successfully build an eboot.pbp if u did everything right. Alternatively, you can add a message behind Dosbox which should appear if you select DosBox in your PSP’s XMB menu later. Just type “elf2pbp” without Dosbox after it to get more information.

```
C:\WINDOWS\system32\cmd.exe
C:\Dokumente und Einstellungen\Murdock>f:
F:\>cd elf2pbp3
F:\elf2pbp3>elf2pbp dosbox
Elf2Pbp v0.3 - loser 2005
successfully generated pbp file
F:\elf2pbp3>dir
Datenträger in Laufwerk F: ist TREKSTOR
Volumeseriennummer: DC17-040E

Verzeichnis von F:\elf2pbp3
14.09.2007 15:33 <DIR> .
14.09.2007 15:33 <DIR> ..
10.09.2007 09:06 1.248.032 dosbox
14.09.2007 15:33 1.261.797 EBOOT.PBP
02.05.2005 21:35 57.344 elf2pbp.exe
14.09.2007 15:12 <DIR> src
3 Datei(en) 2.567.173 Bytes
3 Verzeichnis(se), 86.908.689.920 Bytes frei
F:\elf2pbp3>_
```

- f) Okay, since we now have created our DosBox eboot.pbp, we can now copy it to the PSP. Just connect your PSP to the PC, use the “USB Connection” option in your XMB and wait until Windows finds the console. Then, go to your X:\psp\game150 folder (assuming that the drive letter of your PSP is “x” AND that you use a Custom firmware) and create a folder called “DosBox” or whatever you like. Then, copy the fresh eboot.pbp into that folder. Additionally, copy the file “dosbox.conf” into that directory, which you already downloaded in point a).

If you’ve done everything right, it should look like this:



It’s not that hard, is it? ;)

- g) After that, you have DOS on your PSP. Contratulations! 😊



### 3. How to type in DosBox?

#### a) Typing letters:

You can enter letters with the **p-sprint** method. This uses a variation of key combos in order to type letters. Here are the major key combos listed:



#### b) How to write CAPITAL LETTERS:

You see the **red** UP-ARROW on the SHIFT key of the keyboard picture above? This is meant to tell you how to write CAPITAL letters and how to type the symbols you need the SHIFT key for, i.e. : “ ? < > { } | \_

You’ll have to do the following if you want to write capital letters: A key combo always needs two buttons to be pressed in order to produce a letter of the keyboard. For example if you want to type an “e”, you type TRIANGLE and then TRIANGLE again (I’ll refer to this typing of a PSP button after another with an “→”, i.e. TRIANGLE → TRIANGLE). If you now want to type an “E” (CAPITAL “e”), you have to press the UP-ARROW on your PSP while you HOLD the first PSP button of your key combo. For example:

“e”: TRIANGLE → TRIANGLE (as above)

“E”: TRIANGLE (holding!) →UP-ARROW<sub>(press, then release TRIANGLE AND UP-ARROW)</sub> → TRIANGLE

This is hard to explain, but easy to use, once you’ve figured this out. The same counts for the symbol I’ve mentioned above.

#### c) How to type 1, 2, 3 ... 9 & F1, F2, ... F12?

Since the key combos are not sufficient to type all the over 100 keys of the keyboard with, there are different sets of key combos. Activated by default, because the most important ones are the ordinary letters of the alphabet PLUS some other symbols, mostly those between the letters and the ENTER key on the keyboard. Looking at the picture above, the default ones are those colored in **white** and **green**!

To activate the other sets, you have to press certain PSP buttons at the same time:



LEFT-ARROW + CROSS = Numbers and Function Keys (i.e. 1, 2, 3, ... 8, 9, 0 and F1, F2 ... F12)

UP-ARROW + CROSS = Control Keys (i.e. ESC, CTRL, etc.)

To get back to the default keys just hit the combo for the set you are in now a second time and everything is set back to default.

There are some other sets which are not of importance for now, since CrazyC hasn't mapped them, as far as I saw. However, these three sets (those listed PLUS default) enable you to type every button on your PSP which is on a PC keyboard! Nice thing, ay?

d) The mouse?

The ANALOG STICK (also called NUB), is mapped as the mouse by default. The two shoulder buttons serve as mouse buttons.

NUB = Mouse

LTRIGGER = Left mouse button

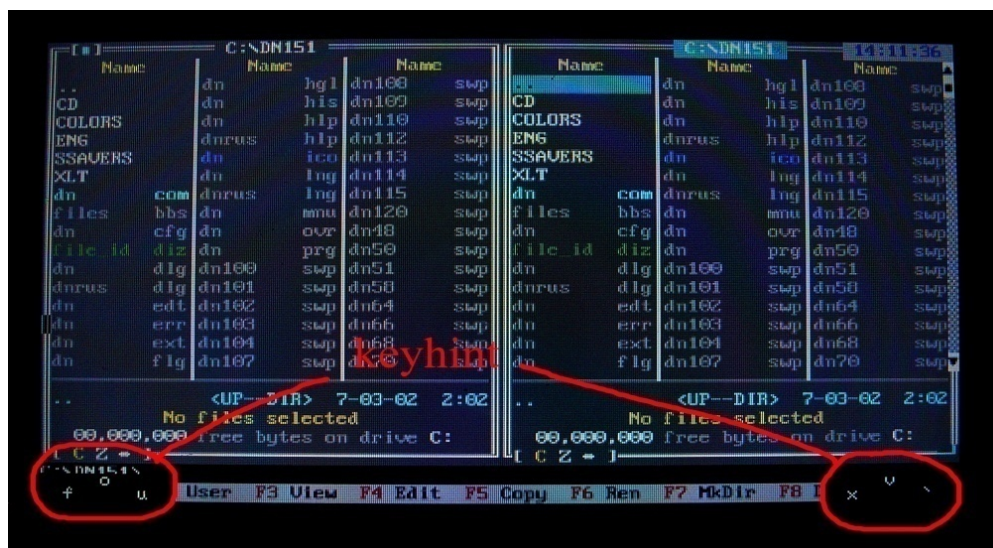
RTRIGGER = Right mouse button

e) Joystick for playing:

You can change the function of the NUB/ANALOG STICK to become the joystick. This is useful in games. For example Prince of Persia uses the joystick by default. Look at point 7.c) "Secret button combos" for how to change the function.

f) Keyhint

A new function which is enabled by default in my release of DosBox is keyhint. After you have pressed a PSP button, DosBox tells you what button combos are available. Here's a picture of keyhint:



g) [Key combos needed in certain games, such as CTRL+Q](#)

Unfortunately, this is **not implemented** in DosBox for PSP, *yet*. I think CrazyC will implement this sometime, like the virtual keyboard (he mentioned recently that he might add one to p-sprint, so there might be two input methods in future releases of DosBox for PSP). This section of the manual will be updated as soon as he added support for key combos.

## 4. [Mounting a “Virtual Drive”](#)

a) [Why is this important?](#)

Well, DosBox only *emulates* a real DOS environment. Because DOS cannot cope with modern formats of hard drives, it would probably not be able to read from your PC’s hard drives, or in this case, from your memory stick. Theoretically, DOS would be able to read from the memory stick, but DosBox was made to be able to run from any OS. That’s the reason why you have to **“mount” a “virtual hard drive”**. Basically, a folder (on the memory stick) is specified to be the virtual drive and the DOS applications then “think” this is a real hard drive (e.g. C:\).

b) [How to do that?](#)

To mount a drive is easy. Depending on the purpose of the drive and on WHAT exactly you want to mount, there are certain things to consider. For example there’s a difference between the mounting of a folder as for example drive C:\ and the mounting of an ISO as a CD-ROM drive. However, the difference is not THAT big, since the commands are basically the same:

- Mounting a folder as a “virtual hard drive” (e.g. C:\) type:  
mount c ms0:\dosbox
- To mount a folder as a “virtual CD-ROM/Floppy drive” (NOT as a hard drive!):  
mount a ms0:\cdrom **-t floppy**
- If you want to mount an iso image:  
**imgmount e** ms0:\imagefile.iso **-t iso**
- But for mounting a hard disk image, use “f”:  
**imgmount f** ms0:\myiso.ima

c) [Explanation of the different commands concerning mounting](#)

You might have noted in part b) of this fourth chapter that there are various different commands used to mount drives. The most important ones will be explained in the following:

- mount:** This command is used to get any folder on your real hard drive (or on your PSP memory stick) mounted as a drive in DosBox.
- imgmount:** This allows you to mount an image file as a drive in DosBox. It can either be a hard drive image or any CD/DVD image.
- t:** This added at the end defines as what the mounted folder is identified.  
Used with mount command: dir/cdrom/floppy  
Used with imgmount command: floppy/iso/hdd
- fs:** Defines what file system is used with the image file (used with imgmount only)
- size:** Needed to mount hard drive images; this tells DosBox the specifications of the emulated hard drive. (used with imgmount only)  
Possible command line: -size 512,63,16,142

## 5. Making DosBox “easy 2 use”

Since *p-sprint* is very hard to use for people who are new to DosBox, there are several options how to load games without the need to type something:

1. You can edit the dosbox.conf file to load a particular game instantly after the initialization of DosBox. To do this, you have to add the following lines in the [QUTOEXEC] section of dosbox.conf at the bottom of the file:

```
mount c ms0:/yourgamefolder           (folder is exemplary, enter the name of your game's folder)
c:
xyz.exe                               (enter the name of the file which should be executed, to get the game running!)
```

2. You can use an application like “Dos Navigator” or “Norton Commander” by which you can browse your folders and execute applications/games. In my release I mentioned above, this is already done. Of course you have to make DosBox start “Dos Commander” automatically, like in the example (1). Feel free to download my release and examine the dosbox.conf to find out how to do this. Some example lines, being taken out of my release is the following:

```
[autoexec]
# Lines in this section will be run at startup.
```

```
INPUTMAP up up
INPUTMAP right right
INPUTMAP down down
INPUTMAP left left
INPUTMAP triangle d
INPUTMAP square lshift
INPUTMAP cross lctrl
INPUTMAP circle lalt
mount c ms0:/dosbox
SYSOPT clock 333
c:
cd dn151\
dn.com
```

## 6. Installing Windows 3.xx

### a. Why Windows 3.xx cannot just be copied to the PSP

The problem is just as simple as that: Due to a limitation of the files opened by any application on the PSP (10 files simultaneously), you cannot copy Windows to a folder and execute win.exe in DosBox. During the loading process, Windows would load more than 10 files into RAM, causing an error.

### b. How then, can Windows run in the virtual environment?

You can bypass this limitation, for whatever reason, by loading an image (see point 4 “mounting a virtual drive”) into DosBox first, and then loading the files from the image. The following point 6.c. is going to explain you step-by-step how to do this.

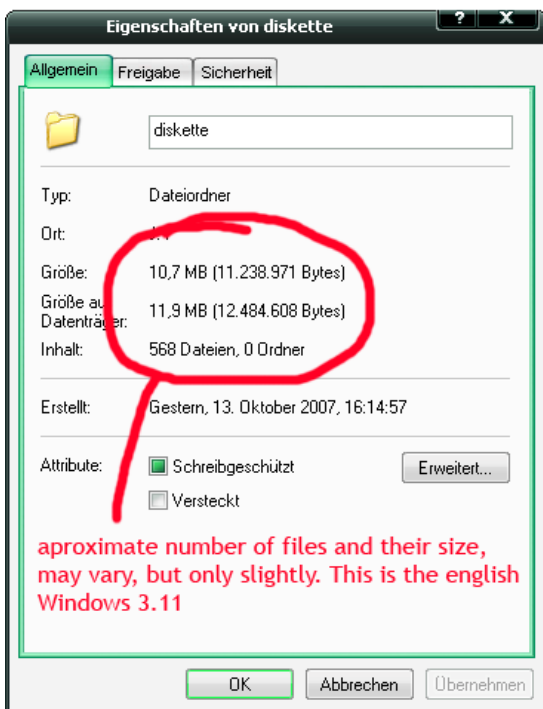
### c. Installing Windows 3.xx – The ‘easy’ way

1. As you might be able to imagine, because of the reason mentioned above, you have to install Windows 3.xx (in this example, I use 3.11 and continuously name it like that from now on) on a PC first. Since most of you won’t have an old PC like a 468 at home, you can use DosBox for PC to do that. So download and install DosBox for Windows from here:

[http://dosbox.sourceforge.net/download.php?main=1&begaming\\_website\\_session=2b34c88378dbbb318447ac904128a766](http://dosbox.sourceforge.net/download.php?main=1&begaming_website_session=2b34c88378dbbb318447ac904128a766)

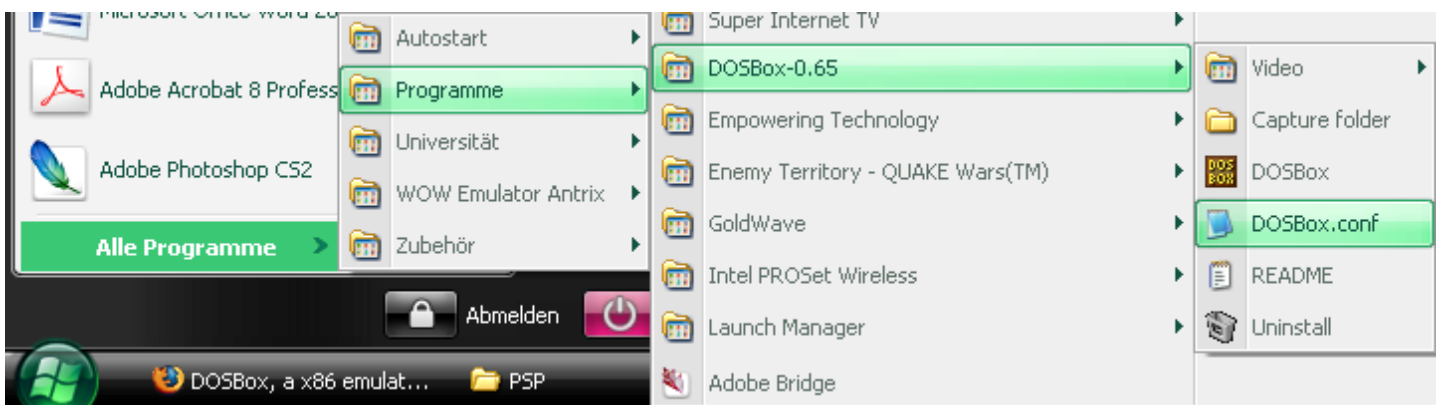
2. Install it like any other program, just follow the instruction on the screen

- Take out your old **Windows 3.11 floppies** and **copy** all of their content into one single folder on your hard drive. Pay attention that the name of the folder you are creating consists of eight letters at most.



- Now you should have a folder with all the files of all floppy discs of Windows 3.11 on your hard drive (preferably in a root directory, e.g. d:\Win311; see picture left).
- Additionally, create a folder on your hard drive which serves as the “virtual drive c:” for DosBox (remember, eight letters at most).

3. After you have successfully installed DosBox on the PC and you have created the two folders, look at the new folder in your START → All programs folder called Dosbox-0.xx (xx representing the latest release version number). Go to that folder and select the link “Dosbox.conf”. The following picture shows the link you should use:



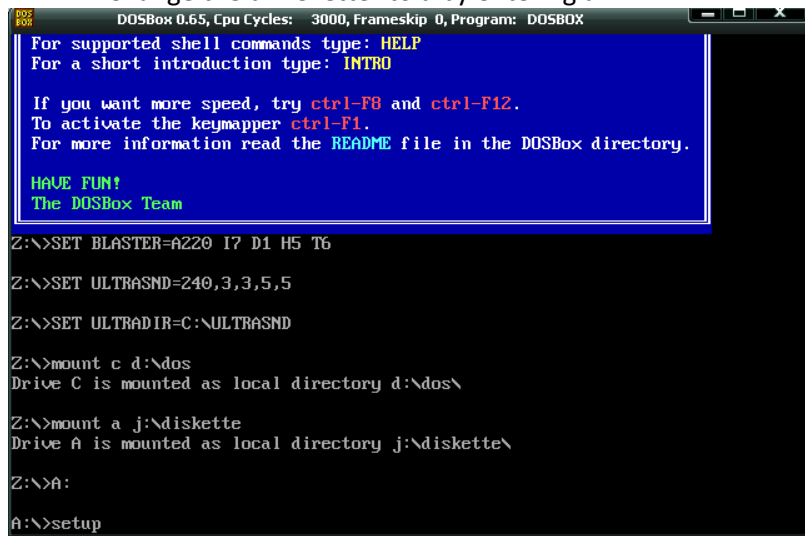
4. You will see the dosbox.conf file which should already be familiar to you from DosBox 4 PSP if you have read through this tutorial beforehand; there are more entries, though.

5. Go to the [AUTOEXEC] section and add the following lines to it:  
 mount c d:\dos (exemplary folder, add the name & letter you've chosen under 4.)  
 mount a j:\diskette (exemplary folder, add the name & letter you've chosen under 4.)



6. Now start DosBox. Preferably, use the link in your START menu, like in 6.c.3., just use the one called Dosbox (brown and yellow icon).

7. Change the drive letter to a by entering a:



```
DOSBox 0.65, Cpu Cycles: 3000, Frameskip 0, Program: DOSBOX
For supported shell commands type: HELP
For a short introduction type: INTRO

If you want more speed, try ctrl-F8 and ctrl-F12.
To activate the keymapper ctrl-F1.
For more information read the README file in the DOSBox directory.

HAVE FUN!
The DOSBox Team

Z:\>SET BLASTER=A220 I7 D1 H5 T6

Z:\>SET ULTRASND=240,3,3,5,5

Z:\>SET ULTRADIR=C:\ULTRASND

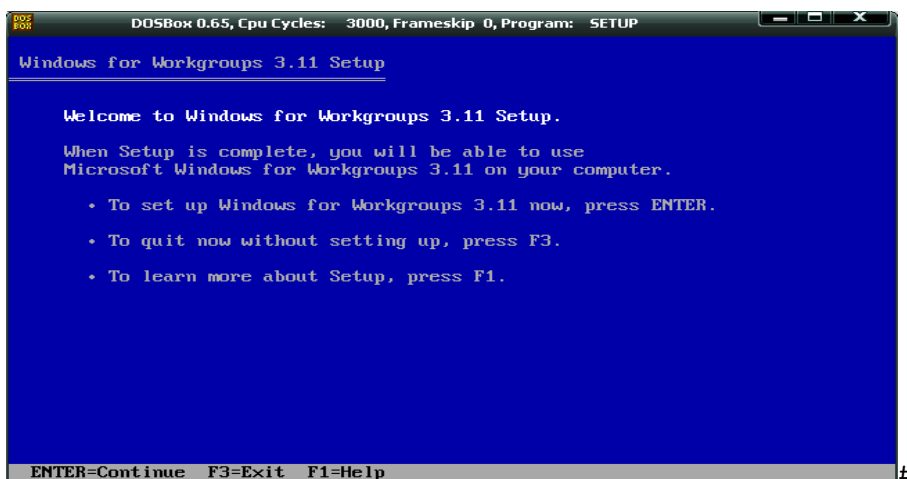
Z:\>mount c d:\dos
Drive C is mounted as local directory d:\dos\

Z:\>mount a j:\diskette
Drive A is mounted as local directory j:\diskette\

Z:\>A:

A:\>setup
```

8. Enter setup and hit the return/enter-button. The setup should start loading now and you should see the following screen:



```
DOSBox 0.65, Cpu Cycles: 3000, Frameskip 0, Program: SETUP

Windows for Workgroups 3.11 Setup

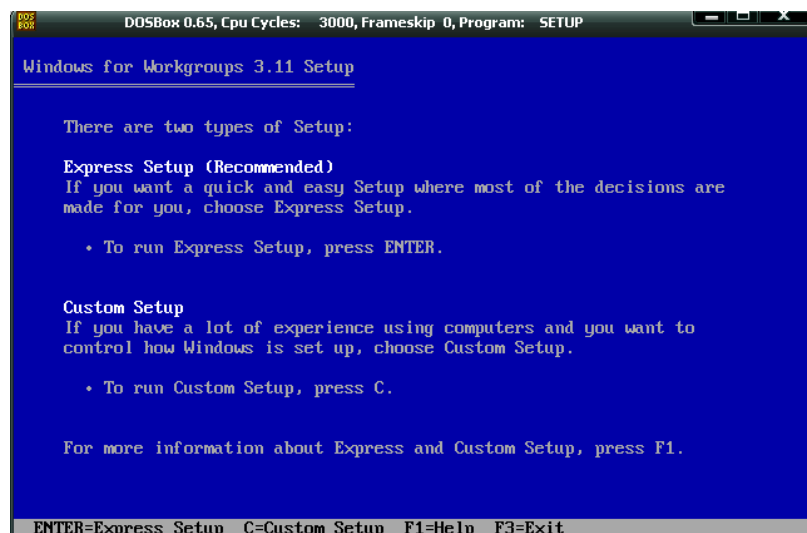
Welcome to Windows for Workgroups 3.11 Setup.

When Setup is complete, you will be able to use
Microsoft Windows for Workgroups 3.11 on your computer.

• To set up Windows for Workgroups 3.11 now, press ENTER.
• To quit now without setting up, press F3.
• To learn more about Setup, press F1.

ENTER=Continue F3=Exit F1=Help #
```

9. Use the express setup if you are not that familiar with Windows 3.11. You do that by hitting enter. Now follow the instructions on the screen. **After the installation** of Windows 3.11 is finished, you will have two options: Restart the system or quit to DOS. Do the second, just hit **“Quit to DOS”**.



```
DOSBox 0.65, Cpu Cycles: 3000, Frameskip 0, Program: SETUP

Windows for Workgroups 3.11 Setup

There are two types of Setup:

Express Setup (Recommended)
If you want a quick and easy Setup where most of the decisions are
made for you, choose Express Setup.

• To run Express Setup, press ENTER.

Custom Setup
If you have a lot of experience using computers and you want to
control how Windows is set up, choose Custom Setup.

• To run Custom Setup, press C.

For more information about Express and Custom Setup, press F1.

ENTER=Express Setup C=Custom Setup F1=Help F3=Exit
```

10. Now you have to get a program which is capable of making ISO files. You could use Nero, but it uses its own file extension. I do not know whether DosBox is able to read it. It might, since the Nero images are similar in structure to ISO files. However, I recommend Ultra ISO. You can download it as a shareware from many different sources, e.g. here: <http://ultraiso-premium.softonic.de/download>

11. After you have installed Ultra ISO, load it and just drag 'n' drop the files you want in your ISO image into the first window, as seen on the two pictures on the left. The files needed are in the folder which you have selected as the "virtual drive c:" in dosbox.conf beforehand in point 6.c.5, namely the files **config.sys**, **autoexec.bat** and the folder **WINDOWS**.

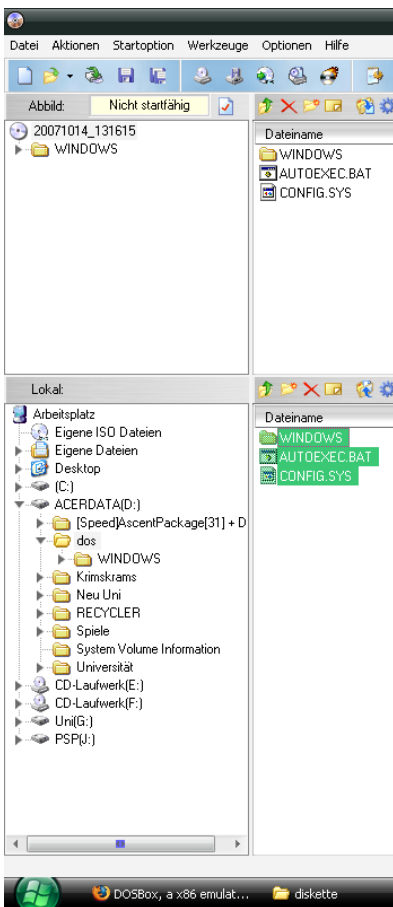
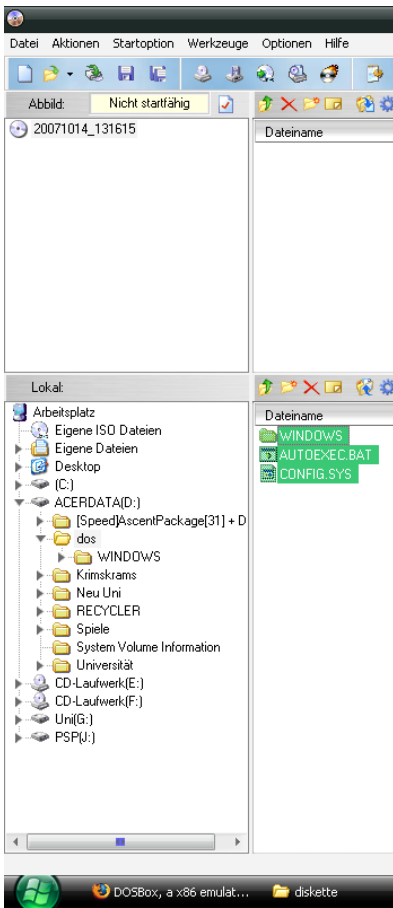
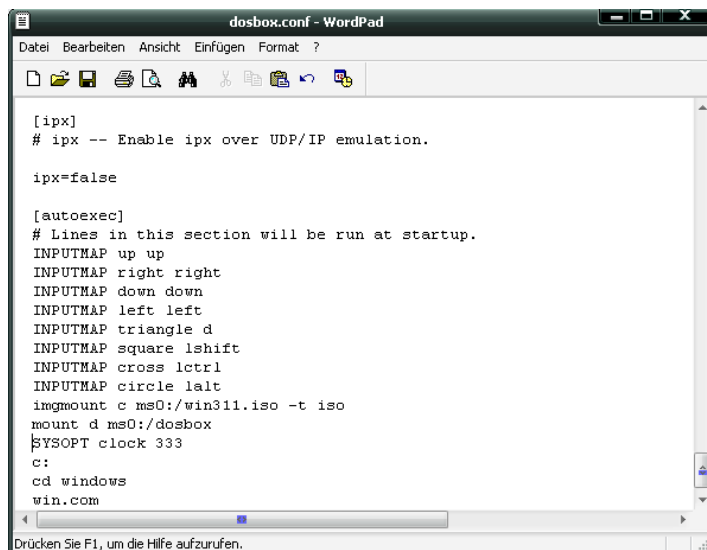
12. Now go to "Datei"/"File" in the upper left corner and select "save as ...". Choose whatever name you desire for the ISO image, but remember only to use eight letters/numbers.

13. Now we have everything we need to run Windows 3.11 on the PSP. Copy the new ISO file to your PSP, preferably to the root directory (e.g. f:\, if the drive letter of your PSP is f: in Windows)

14. Now edit the dosbox.conf file of your DosBox 4 PSP in the directory f:\Game150\DosBox and add/change the following lines in the [AUTOEXEC] section:

```
imgmount c ms0:/win311.iso -t iso      (exemplary folder, add the name &
                                       letter you've chosen)
mount d ms0:/dosbox                  (exemplary folder, add the name &
                                       letter you've chosen)
SYSOPT clock 333
c:
cd windows
win.com
```

So now your dosbox.conf file on your PSP should look approx. like this:



**NOTE:** The folder in the line `mount d ms0:/dosbox` is the folder which contains your DOS games/applications. Because Windows must/should be on drive c:, we now add a “virtual drive d:”, containing the games. **DosBox now mounts the folder your games are stored in as drive d:\ and not as c:\ anymore.**

15. This was the final step in installing Windows 3.11 on your PSP. Whenever you start DosBox now, Windows 3.11 is loaded automatically. During the loading process, you’ll most likely receive a warning that the win.ini is write-protected. Because we load Windows from an image, this is normal.

**DISADVANTAGE:** The only but considerable problem concerning this method is that you are creating an image file, similar or exactly the same as an image of a CD or DVD. ISO images cannot be written to in DosBox. Unfortunately this also means that you cannot install further programs in Windows 3.11 on your PSP. It is possible to install Programs for Windows, though. But you have to do this before you make the image and copy it to the PSP (steps 10 to 12 of this chapter). The following, more complicated part of chapter 6 is going to tell you how to install Windows 3.11 and still be able to read/write on drive C:\.

#### d. Installing Windows 3.11 – The ‘tough’ way

It took me very long and a ‘little’ help from other users in certain forums like a guy called “**vaporize**” to figure this out. However, some problems are still unsolved. For example you have to manually put Windows onto the “hard drive”/ into the image. For some reason, it is impossible to install Windows 3.11 to the image from DOS/DosBox. The setup aborts the copy-process with an error. Therefore, we have to use a little trick.

1. Download the following programs:
  - **Bochs** (PC Emulator): [http://bochs.sourceforge.net/cgi-bin/topper.pl?name=See+All+Releases&url=http://sourceforge.net/project/showfiles.phpqmrkgroup\\_id=12580](http://bochs.sourceforge.net/cgi-bin/topper.pl?name=See+All+Releases&url=http://sourceforge.net/project/showfiles.phpqmrkgroup_id=12580)
  - **WinImage** (Image file editor): <http://www.winimage.com/download.htm>
  - **Dosbox**: <http://dosbox.sourceforge.net/download.php?main=1> (just if you haven’t d/l’ed that one already)
  - **Dos 6.22 Bootdisk**, use google.com to find it, this material might be copyright protected.
2. Install all of them; follow the instructions on the screen.



3. Take your Windows 3.11 floppy disks and copy their content into one single folder.
4. Now go to the installation folder of Bochs and execute a file called "bximage.exe". This file can make an image of a hard disk.
5. Choose "hd", "flat", size of the image in mb (Megabytes), and a name for the image. The program will give you some information at the end of the process; take down this data. You will need it later. (I'll call this image c.img)
6. Repeat the process and create a second image. (I'll call this image d.img)
7. Now you have the image of your new "virtual hard drives". Unfortunately, we yet have to create a partition, format it, **TWICE** and then copy the windows installation files to d.img
8. Open your dosbox.conf file again and add the following line at the very end of the file:

```
imgmount 2 L:\dos\c.img -size 512,63,16,304 -fs none
```

**REMEMBER:** This is only an example. Take the name and path of your file. The numbers are those you have taken down in 11. Basically, only the last number ever changes, the number of cylinders. Change it so it matches the one you have taken down.

9. Below this line, add another one:

```
Boot c:\dos622.ima
```

AGAIN: This is only an exemplary file name. You should have downloaded an image of a **DOS boot disk**. Use the path of this image after the "bot" command in this line.

10. Open Dosbox. Now the boot disk will load and you should have an a:\ on the screen. First, type "fdisk", hit 1 for setting up a primary partition and set it up. You hardly can do anything wrong.
11. After you have set it up, fdisk will tell you to hit any key to restart. Just close Dosbox at this point, since the restart attempt will crash Dosbox anyway. This is normal, since fdisk tries to restart a computer with commands with which Dosbox can't cope.
12. Start Dosbox again and wait until you see the a:\ again. Now type "format c: /s" to format the fresh drive. This won't take long, since we are emulating a real system. After you have formatted the "virtual hard drive" aka your image file you can close Dosbox again.
13. Open your dosbox.conf file again and put a # in front of the line you entered in point 7.
14. add the following line at the very end of the file:

```
imgmount 2 L:\dos\d.img -size 512,63,16,304 -fs none
```

15. repeat the steps explained in points 9 and 10
16. start Dosbox again and format this virtual hard drive, too. Type “format c:” (leave the /s away this time!)
17. when the formatting is finished, close Dosbox, open your dosbox.conf file and change it to get the following lines:

```
imgmount c n:\c.img -size 512,63,16,111 -fs fat  
imgmount d n:\d.img -size 512,63,16,101 -fs fat  
#boot n:\dos\dos622.ima  
boot -l c
```

**AGAIN:** Remember that these lines are once again exemplary! The first two lines should match the lines you have entered in points 7 and 13 (except of the **bold** and **red** marked things!

18. Now open Win Image (Shareware) and open your second image file (FILE → OPEN) ... **the one I call d.img**
19. Create a folder (IMAGE → CREATE FOLDER ...) called WINDOWS or similar.
20. Import Windows' setup files which you have copied in a folder previously in point 3 (IMAGE → INJECT A FOLDER ...) into the folder you have created in the image in step 19.
21. Now save your image file (FILE → SAVE ... or CTRL+S) and close Win Image.
22. You finally have your image file d.img with the setup files ready to install Windows 3.11
23. Open up Dosbox again. DOS should be booting up and ask you for some information such as date, time, etc. ... just hit enter until you reach the DOS command prompt and **c:\** appears.
24. Type **d:** and hit **enter**
25. Type **cd windows** and hit **enter**
26. Type **setup** and hit **enter**
27. Windows setup will start. Choose “Express Setup” and wait until the Windows 3.11 Installation is finished.
28. Do **NOT** choose “restart” but choose “return to DOS”.
29. Now close Dosbox and start it again. HIMEM should now start and after that, **c:\** is visible again.
30. Type **win** and hit **enter**.

31. Now Windows 3.11 should start if you have done anything correctly.
32. Copy your hard drive image file (mine is called c.img in tis example) to the PSP and open the dosbox.conf file of **DosBox 4 PSP** (not of Dosbox for PC!)
33. We will now mount the new image file as drive c: by adding the following line to your dosbox.conf:

```
imgmount c ms0:/c.img -size 512,63,16,111 -fs fat  
boot -l c
```

**AGAIN:** Keep in mind that you cannot copy 'n' paste this line to your config file!!! Alter the path and name of the file so it matches our filename and path. Additionally, change the last number of the set to that you used in the prvious points, the number(s) which bximage.exe told you. **If you don't follow this instruction as precisely as possible, it might and most likely WILL not work!**

34. Note that you now load a "real" DOS. If you have previously loaded ISO images with Dosbox, those won't work anymore. This is the "catch" with this method. The great advantage is that now you can write to the drive! You can install applications to Windows 3.11, copy files using the Windows File Manager etc.
35. Now fire up DosBox 4 PSP and give Windows 3.11 and your new image file a try. If you have done everything right, you should see the Windows 3.11 logo and shortly afterwards the OS itself.

## 7. Miscellaneous things related to DosBox:

### a. How to bind computer keyboard keys to PSP buttons:

A major topic concerning the playing of PC games on the PSP is the mapping of keys which the game uses to buttons on your PSP. An example is given in the excerpt of my dosbox.conf file above. In order to map keys to PSP buttons, you use the "INPUTMAP" command. In my release of the port by CrazyC, there is an example file named prince2\_psp.bat, which I always use to map the keys for games. This is basically the easiest way. **I didn't make this file**, I just use it. I have it from some site, but unfortunately I'm not sure from where, I ASSUME it was dcemu.co.uk ... However, s file like this can be made by you in less than 5 mins. In this example I'll refer to the one being provided in the package. If u want to make one yourself copy 'n' paste the text below into a \*.bat file.  
It works as follows:

You copy a game to your memory stick

1. You copy the prince2\_psp.bat file into that directory

2. Open the .bat file by clicking with the right mouse button on it and hitting "edit".
3. Then you see what's in this file:  
ECHO OFF  
INPUTMAP up up  
INPUTMAP right right  
INPUTMAP down down  
INPUTMAP left left  
INPUTMAP triangle d  
INPUTMAP square lshift  
INPUTMAP cross lctrl  
INPUTMAP circle lalt  
INPUTMAP start enter  
INPUTMAP select esc  
INPUTMAP exec prince
4. The only thing you have to do is look up the file your particular game is started with and enter its name in the line "INPUTMAP exec". Just substitute the word "prince" with the filename you need. That's it! In general, you won't need to enter the file extension. But IF there are two files named "game.exe" and "game.bat", you'll have to add the extension in order to distinguish which file has to be loaded!
5. Now, as you might be able to guess already, you have the keys mapped as the lines say: The "cross" button of your PSP emulates the left CTRL button on a keyboard, etc. Feel free to edit this as you like and as the games you want to play require it. For example the good old game "Battle Isle" needs the SPACE button to be mapped to any button of your PSP in order to play it. So you can randomly choose one of the lines above and edit it like this:  
**"INPUTMAP triangle space"**

#### b. Important settings in the dosbox.conf file



*NOTE:* Usually, you type directory names as follows: c:\ In the dosbox.conf file. However, you use the "/" instead of "\" ... this is important, because if you use the BACKSLASH, the application won't understand the path you've entered. Use the *normal SLASH "/"* ...

**Thx to Spotfist for hinting to that issue!**

There are so many entries in the dosbox.conf file. Some are of more importance because they can make DosBox run faster; some are of no importance since they are "only" essential for Dosbox in order to run at all.

Here I'm trying to explain some important ones:

**sensitivity=35**

This entry is of importance, since it defines how sensitive the nub/analog controller reacts to manipulation. It's like the sensitivity of your mouse on a real PC. I've set it to 35. CrazyC has it at 50 if you use his config file. Personally, I think this is a little too

fast, since you cannot aim accurately, for example in Dos Navigator. So I'd recommend a value of about 30 to 40. But feel free to try it out yourself!

#### memsize=10

This entry is VERY important. It tells DosBox how much RAM it is allowed to use. CrazyC has this value at 5 by default. But he told people like me hanging around his forum thread all time that you can set this to a maximum of 10, meaning DosBox uses 10 Megabytes of the PSP's memory.

#### frameskip=0

As other emulators, too, DosBox has the option to set frameskip. For those who don't know, it means that a defined number of frames are skipped during emulation. If a game runs pretty slow, this is handy, because then the emulator just leaves out a frame, which is not rendered and therefore the game runs faster. It can improve the speed of a game very much, but it can also cause problems, because some games or special graphics show errors when this option is enabled. Most of the games will run well, I suppose. This option is much about trial 'n' error. So if you have a game running too slow, enable this option and see how it runs. You can set any frameskip u want between 0 and 9 I think. But I'd NOT recommend anything above 2 or 3 ... I haven't tried it with DosBox yet, but in general emulated games look very ugly if the frameskip is too high.

**NOTE:** Some people have also reported errors and even crashes if frameskip is set too high in Dosbox. I am not sure whether this is a problem of the Dosbox version for the PSP, I think I have also read about this in the general Dosbox for PC forums.

#### SYSOPT clock 333

This option, used in the [AUTOEXEC] section makes DosBox/the PSP itself run at 333 MHz. I'd recommend to always using this somewhere in autoexec in order to be sure DosBox runs at maximum speed.

#### keyhint=true

This is a pretty new ability of DosBox and emerges from our constant complains about the p-sprint input method of Dosbox and its complexity ☺ If this is set to TRUE (false is possible, too) DosBox tells you what key combo is possible with the button you've just pressed. For example as you can see in 1.g), if you hit SQUARE, you can afterwards hit SQUARE again to get an "s" written OR you can hit TRIANGLE and u'll get a "t" written. Before "keyhint" was implemented, you had to know what button to press after the first time you hit SQUARE. Now, this handy advancement tells you what options you have after you hit a button on the PSP. It's hard to explain, but in my release it is switched on by default. Just try it out yourself.

***This is the final version of the manual for the DosBox emulator. I think I'll add some more commands and explanations for them in later releases. I'll also encourage other people who are familiar with DosBox to contribute to this list.***

c. [“Secret” button combos:](#)

Here I’ll list two key combos you can press to switch between the p-sprint input method, your button assignments and mouse/joystick during a game ... thx CrazyC for telling these special, handy combos to the public!

**LTRIGGER + RTRIGGER + SELECT + ARROW-DOWN:**

This allows you to switch between button assignment and p-sprint. It’s very handy if you’ve mapped your PSP keys in order to play a game, but suddenly, you have to enter a name or whatever during playing the game.

**LTRIGGER+RTRIGGER+START+ARROW-DOWN:**

By default, the nub or analog-stick is used as the mouse and the right and left shoulder buttons of the PSP are the mouse buttons. If u now push these five buttons at the same time, the analog-stick changes its function and is the joystick. This is important in games like Prince of Persia 1, because you need the joystick to get the prince moving ☺

d. [Getting a game running that crashes Dosbox right after loading with dos32a.exe](#)

The genius Mr. CrazyC has mentioned a solution to the problem that *some* games tend to crash the whole DosBox right after you try to load it. Some even give a strange error message such as this one:

```
DOSBox 0.71 -psp build Sep 22 2007 13:15:12
Exception - Bus error (data)
EPC      - 088E9794
Cause    - 1000001C
Status   - 60008613
BadVAddr - 60014008
zr:00000000 at:0008FF00 v0:00000000 v1:08A8FE54
a0:00000000 a1:10000000 v2:00000000 a3:0898FE44
t0:00000001 t1:0898FE44 t2:08990000 t3:0898FD04
t4:08990000 t5:00000000 t6:00000000 t7:00000010
s0:10000000 s1:00000000 s2:08A8FE44 s3:10000000
s4:0000034C s5:00000220 s6:08859824 s7:08990000
t8:00000001 t9:00000004 k0:0885FF00 k1:00000000
gp:08997800 sp:08859770 fp:08990000 ra:0889596C

eax:00000000 ecx:00000400 edx:00000000 ebx:000001D8
esp:00001F44 ebp:00001F5A esi:00000000 edi:00000000
es:000001D8 cs:00003E58 ss:00000180 ds:00003E68
fs:00000000 gs:000001D0 eip:00003EAA
```

Sometimes, this error derives from an incompatibility of Dosbox with the DOS4GW version used with the game(as far as I have understood this problem). The solution is a little application named “**dos32a**”.

It is similar to DOS4GW, but faster, more effective and more compatible. It was programmed as a substitution for DOS4GW. So the only thing to do is download **dos32a** from the website of the coder:

[http://dos32a.narechk.net/index\\_en.html](http://dos32a.narechk.net/index_en.html)

After unpacking the zip-file, you will see several files and a folder called "binw". In this folder is a file called **dos32a.exe**. This is the file we need. Just take this file and substitute the DOS4GW.exe file of the problematic game by copying the dos32a.exe into the game folder (in which you also find the DOS4GW.exe, of course) and **rename the dos32a.exe to DOS4GW.exe**. Now try whether the game still crashes. If not, congratulations!

If it still crashes (like the good old strategy game M.A.X. which still won't load) it doesn't seem to be a problem of the DOS4GW.exe.