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Puppy 2.17 Manual

1. Introduction

Puppy Linux is a very smart Linux distribution, which was developed by Barry Kauler. Barry Kauler is an Australian professor in (early) retirement. He developed a Windows similar Linux, which contains all the important programs and is nevertheless small enough to run even on older PCs completely in the RAM. Puppy runs on almost all hardware, is very easy to handle and can easily be adapted to personal preferences. Many volunteers constantly extend the software on offer. Puppy has a world-wide community, which communicates around the clock in English over the Internet. Further information about Puppy.

This manual will appeal to Linux beginners and Linux users, who would like to become acquainted with Puppy. There is a variety of information on the Internet, which you can reach from the Puppy-Homepage. This manual summarizes the most important information for Puppy beginners and explains the first steps with Puppy.

How to use the manual:

- Menu entries and buttons are set in "", submenus are separated by vertical lines. Example: "Menu | Shut Down | JWM restart" means, that you first click on the button "Menu", than (at the appearing menu) on the headword "Shut Down" and finally on the headword "JWM restart".
- In the manual the letter x is used as a substitute symbol for a number. For example /dev/hdax means that you have to write /dev/hda1, /dev/hda2 or /dev/hda3 - just use what suits your computer.
- With the term "shell" the program "Menu | Run | Rxtv terminal emulator" is meant.
- If you find a mistake please send a message to mail@puppy-linux.info.

2. How to get Puppy

You can get Puppy Linux from ibiblio.org or puptrix.org (you will find more download-links [here](#)). Save the current release `puppy-2.xx-seamonkey.iso` (e.g. `puppy-2.17-seamonkey.iso`) on your harddrive. The filesize is about 80-90 MB.

To make sure that you downloaded a genuine original file, you can compare the checksum of the ISO file with the associated file `puppy-2.xx-seamonkey.iso.md5.txt` (e.g. `puppy-2.17-seamonkey.iso.md5.txt`). Download this file as well.

Within Linux:

Open a shell and change into the directory, in which you stored the two files. Enter the following command:

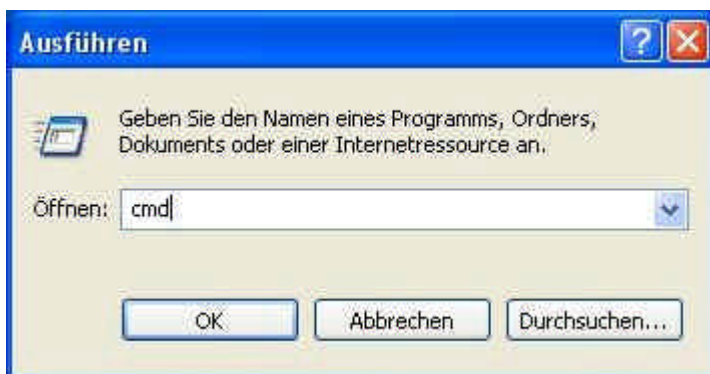
- `md5sum puppy-2.17-seamonkey.iso`

As a result you get the checksum. Open the file `puppy-2.17-seamonkey.iso.md5.txt` with a text program (e.g. `abiword`). The two checksums should be identical.

Within Windows:

Download the DOS-Program [md5sum.exe](#). To open a DOS-Box click on "Start | Execute". This opens an input window, into which you enter the following command:

- `cmd`



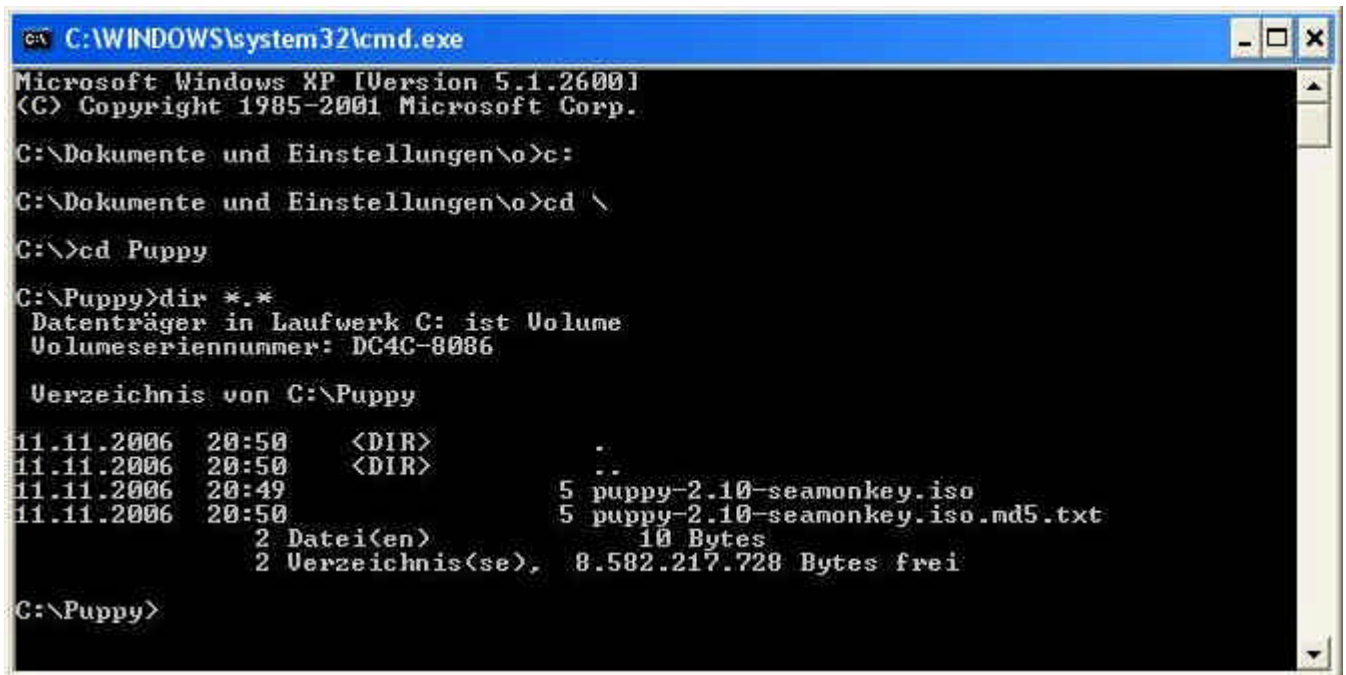
Now you get a DOS-Box.



Change into the directory, in which you stored the two files, e.g. `C:/Puppy`. Enter these commands:

- `c:`

- cd \
- cd puppy
- dir *.*



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

C:\Dokumente und Einstellungen\o>c:
C:\Dokumente und Einstellungen\o>cd \
C:\>cd Puppy
C:\Puppy>dir *.*
Datenträger in Laufwerk C: ist Volume
Volumeseriennummer: DC4C-8086

Verzeichnis von C:\Puppy

11.11.2006  20:50    <DIR>          .
11.11.2006  20:50    <DIR>          ..
11.11.2006  20:49                5 puppy-2.10-seamonkey.iso
11.11.2006  20:50                5 puppy-2.10-seamonkey.iso.md5.txt
                2 Datei(en)           10 Bytes
                2 Verzeichnis(se), 8.582.217.728 Bytes frei

C:\Puppy>
```

Now you should see the Puppy-files. Enter the command:

- md5sum -c puppy-2.17-seamonkey.iso.md5.txt

You should get an "OK".

Subsequently you burn the ISO file (in our example puppy-2.17-seamonkey.iso) on CD. To burn an ISO file on CD, consult the manual of your CD-burning software. Beginners sometimes copy the ISO file simply as a data-file on CD, which doesn't work. Usually the CD-burning software has a special menu option for burning an ISO file on CD. You can verify whether you burned the CD correctly by looking at the CD with the file manager (e.g. Windows Explorer). If you see files as "image.gz" or "vmlinuz.gz" everything is OK. If you see the file "puppy-2.17-seamonkey.iso" this is incorrect.

Tip:

Create a second, identical Puppy CD as a backup copy, in case the original CD becomes corrupted.

3. How to run Puppy

A great advantage of Puppy Linux is that Puppy doesn't have to be installed. You can run Puppy directly from the CD, without affecting your operating system. Alternatively you can install Puppy on a harddrive or a USB stick.

3.1 How to run Puppy the very first time

First you must set up the boot sequence in the BIOS. If you do not know how to get into the BIOS-setup, consult the computers manual. Usually you press one of the following keys immediately after switching on the PC: ESC, one of the function keys F1 to F12 or the delete key. At the BIOS-setup you change the boot sequence so that the CD-ROM drive is first and the harddrive is second. Close the BIOS-setup and store the settings.

The PC then usually reboots. Immediately insert the Puppy CD into the CD-ROM drive. If you are too slow your old operating system starts. In this case keep the CD inserted in the CD drive and start the PC again.

Now Puppy should start. During the starting procedure you are requested to choose your country. Navigate with the cursor keys downward to your country. Then strike the return-key. Thereafter a further window (Puppy video Wizard) appears, "Xorg" is already highlighted. Press the return-key. Wait some seconds till the next window (Puppy video Wizard) appears. There you navigate with the cursor keys to your screen (LCD panel = flat screen, CRT = standard monitor) and resolution. Then strike the return-key. After some seconds the Puppy desktop appears.

Puppy was loaded completely into RAM. Your old operating system is not touched, so that you can look safely at Puppy Linux. Now you can take the CD out of the CD drive.

If you terminate Puppy you are asked whether you want to store the settings (and your personal files) in a file named pup_save.2fs on a harddrive "SAVE TO FILE" or CD-ROM "SAVE TO CD". (you can change between the options with the tab-key). If you do not want to save the settings mark "DO NOT SAVE" and press the return-key.

If you would like to store the settings (and your personal files) you are asked on which harddrive this should happen.

3.2. Boot-Options

When Puppy boots it offers you some boot-options. If you do not enter anything, Puppy is loaded after some seconds into RAM. When starting Puppy automatically looks for a previously stored pup_save.2fs-file. If this file doesn't exist yet, you are asked for the keyboard map and the screen resolution (see chapter 3.1).

With the boot-option

- puppy pfix=ram

you have the option to start Puppy into RAM without your pre-saved-settings and without your personal files even if a pup_save.2fs-file already exists. This boot option is very useful and is used in this manual a few times. The other boot-options are normally not needed.

3.3 How to save the settings and your personal files

So that Puppy can store all settings and your personal data, a file named pup_save.2fs is saved. I recommend a size of 512 MB for this file. This is big enough for further programs and can be backed-up on CD-ROM (note: if you want to backup the file on a USB stick, it must have a storage capacity of 1 GB). Puppy can store the pup_save.2fs-file on a FAT32-

filesystem only (note: USB sticks and external harddrives are usually formatted with a FAT32-filesystem, so that they can be used without problems). Windows XP-users normally have a NTFS-filesystem only. There are two options for you to store the pup_save.2fs-file as well:

- Save the file on an external harddrive or USB-stick.
- Make the NTFS partition smaller and create one or more further partition with FAT32-filesystem and ext2/ext3-filesystem

If you intend to use Puppy durably you should select the second alternative. This alternative has many advantages.

4. How to install Puppy

If you don't feel like booting Puppy from CD-ROM all the time, you can install Puppy to hard disk. This requires some preparations.

4.1 Preparing the installation

4.1.1 Harddrives, partitions and filesystems

A harddrive can be divided in one or more partitions. If you create several partitions on a harddrive, each partition appears like a harddrive in the operating system. In other words: although you have only one harddrive in your PC, you will see several (virtual) hard-drives with Windows or Linux. Windows designates the harddrives (as well as the floppy disk drive and CD/DVD drive). In Windows they will be identified with letters. Usually A designates the floppy disk drive, C the harddrive (first partition), D the CD-ROM drive, E the harddrive (second partition), F the harddrive (third partition) and so on. Each partition has its own file system, Windows normally uses NTFS (Windows XP) or FAT32 (Win98, Win95).

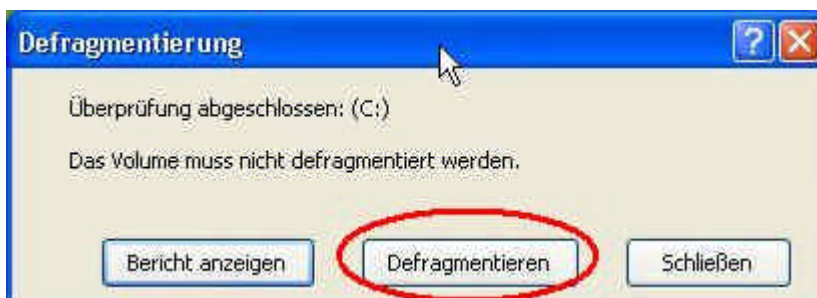
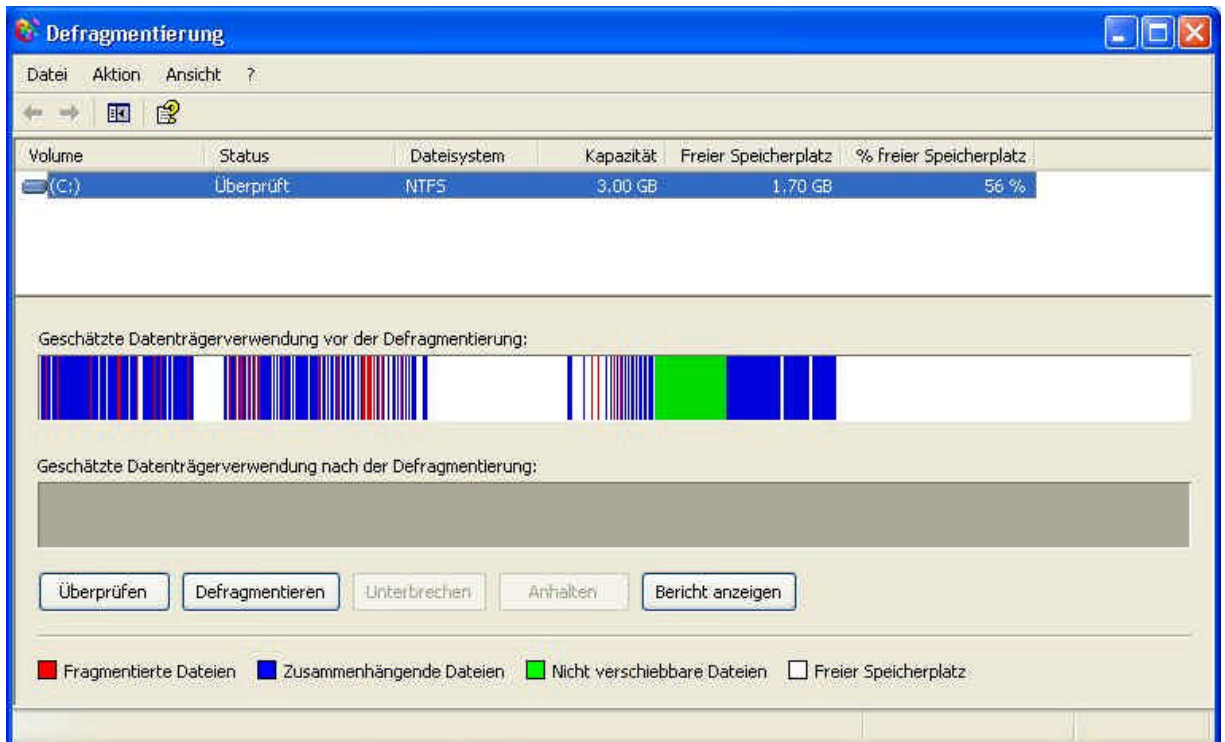
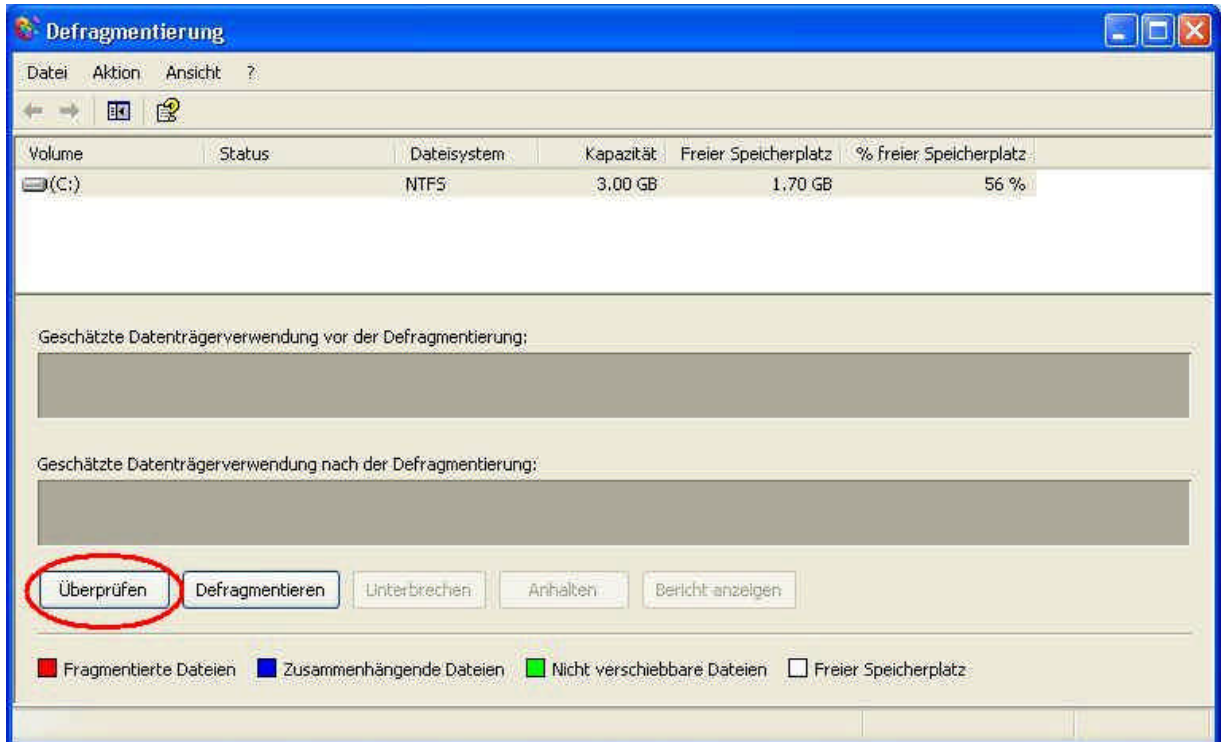
With Linux the (first) harddrive is addressed as /dev/hda or /dev/sda. If your PC has a second harddrive, it is addressed as /dev/hdb or /dev/sdb. The partitions are sequentially numbered, starting with one. The partitions of your harddrive are addressed as /dev/hda1 (corresponds to the Windows C-partition), /dev/hda2 (corresponds to the Windows E-partition), /dev/hda3 and so on. Linux can work with different file systems such as ext2, ext3 or ReiserFS. These file systems are not readable by Windows. In addition Linux can work with Windows filesystems too. Due to this option a FAT32-Partition is ideal to exchange files between Windows and Linux.

4.1.2 Defragment your hard disk

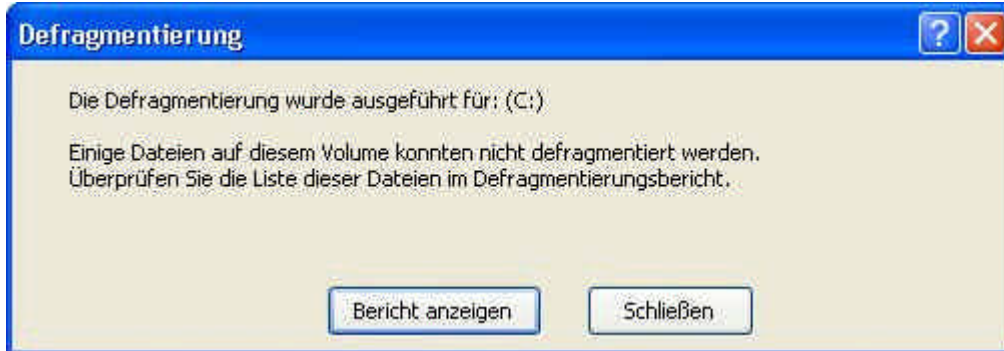
Before creating new partitions on your hard drive, you should defragment the drive so that all data is stored at the beginning of the existing partition. Here is how to do it:

- Start up Windows.
- First, backup your files to CD-ROM, DVD, or an external hard drive. Also remember to backup your Internet link collection (Favourites) and your e-mails. If your data is encrypted, it is advisable to decrypt it before backing it up. This protects you from data loss because modifying hard drive partitions always carries the risk of data loss.
- Next, start the Disk Defragmenter program under Windows. The program is located at "Start | All Programs | Utilities | System Programs | Disk Defragmenter".

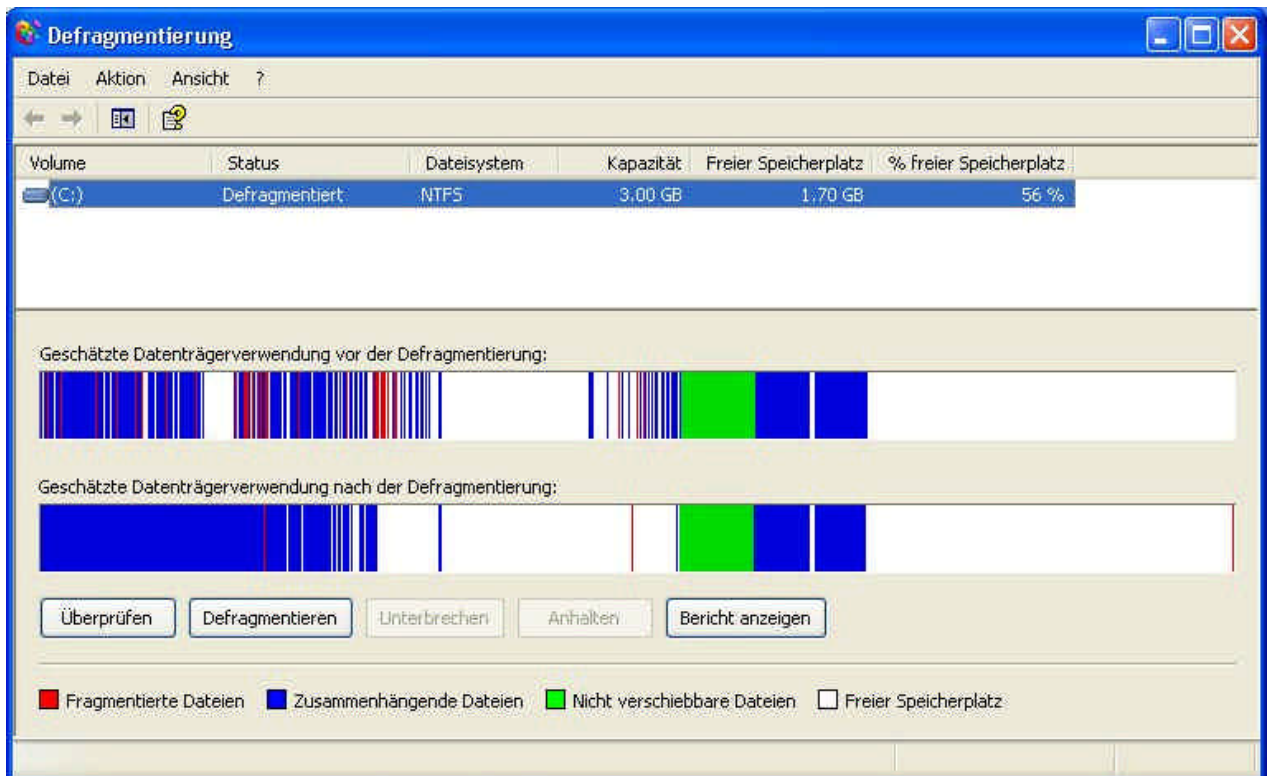
Select hard drive c:\ and click the "Check" button.



Click the "Defragment" button. Depending on the size of the partition and the amount of data on it, this process can take a long time (over an hour). If you have very large amounts of data, you can speed up this process drastically by deleting your files after you have backed them up (see the previous item) and restoring them once you are done with the modifications. In this case, please make sure beforehand that your backup is readable, otherwise there will be wailing and gnashing of teeth.



Click the "Close" button.



There is now space on partition C: for additional partitions.

- Shut down Windows.

4.1.3 Creating partitions

Now you should plan the layout of your hard disk partitions regarding file system and size. I recommend creating three or four partitions in addition to the Windows partition. The following example assumes you have exactly one Windows partition (drive letter C). Your hard disk would then look like this:

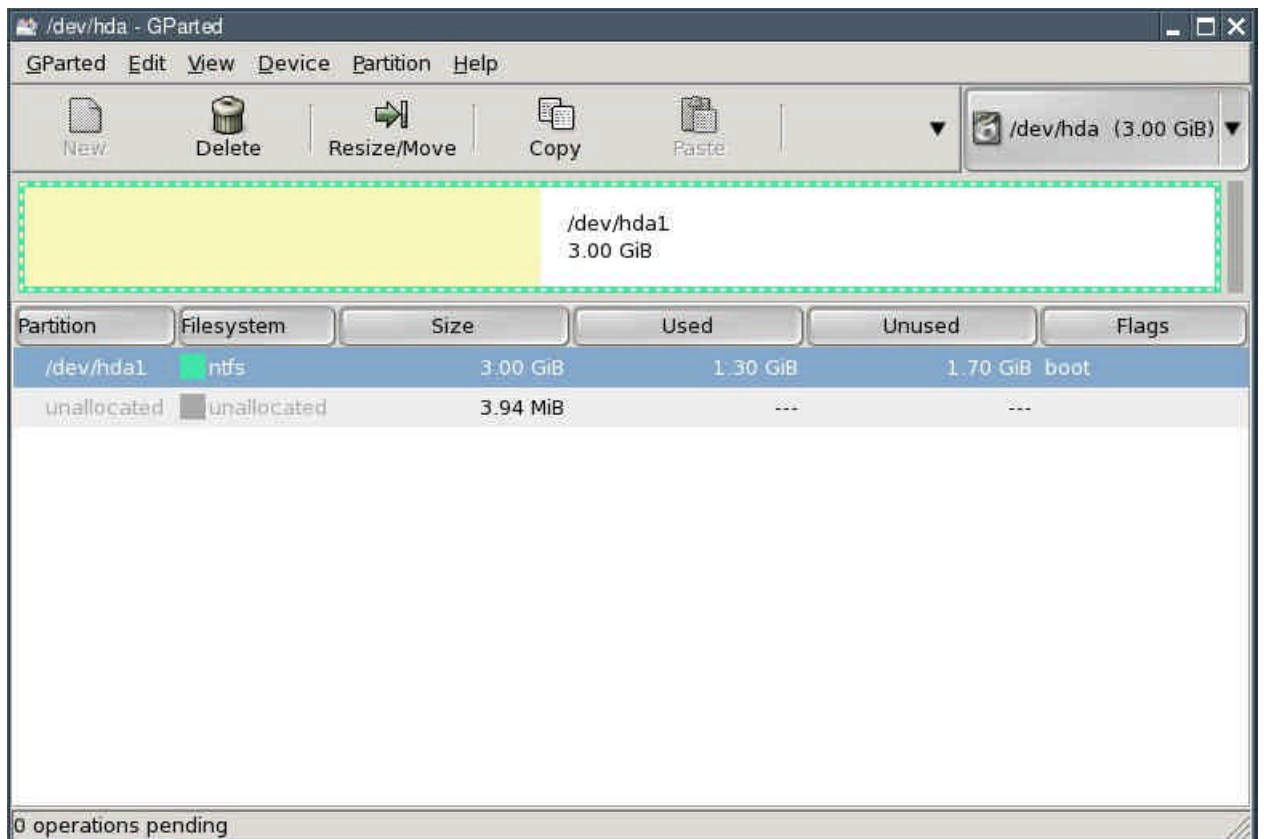
- First partition: NTFS or FAT32 (Windows)

- Second partition: ext2 or ext3 (this is where Puppy will be installed to)
- Third partition: Linux swap (for page files)
- Fourth partition: FAT32 (for exchanging data between Windows and Linux)
- Optionally, a fifth partition: ext2 or ext3 (Linux)

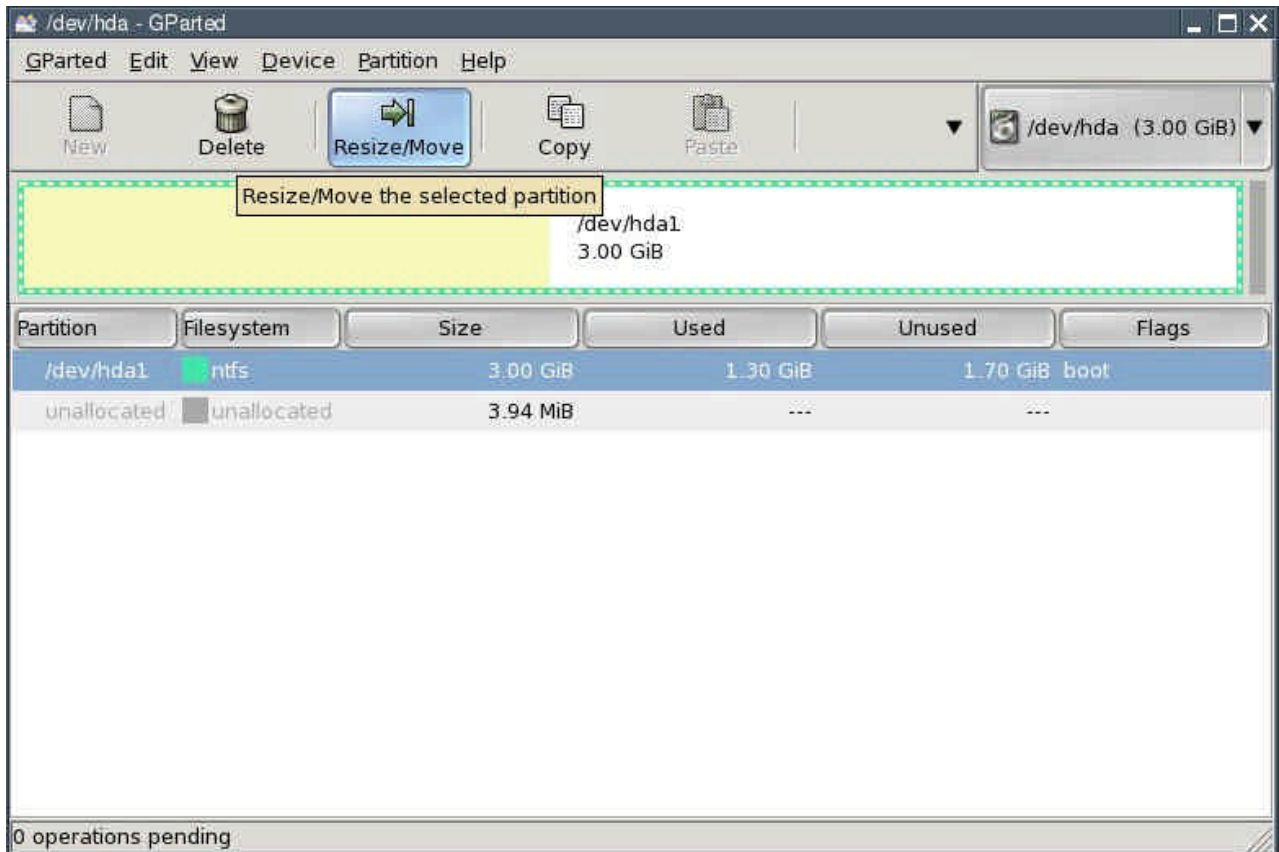
Windows will continue to reside on your first partition with all its programs and data. The second partition (recommended size about 1-2 GB) has a Linux file system (ext2 or ext3). This is the partition Puppy will be installed to. The third partition (exactly as large as your computer's memory) will be a Linux swap partition that Linux can ... well, swap files to. The fourth partition has a FAT32 file system, which is recognized by both Windows and Linux. This partition (recommended size about 5 GB) is used for files that you want to access from both Windows and Linux. If you want to manage large amounts of data under Puppy (e.g. music collection, pictures), you should create a fifth partition with a Linux file system (ext2/ext3). This file system cannot be accessed from Windows and is meant for Linux only.

To create the partitions, proceed as follows:

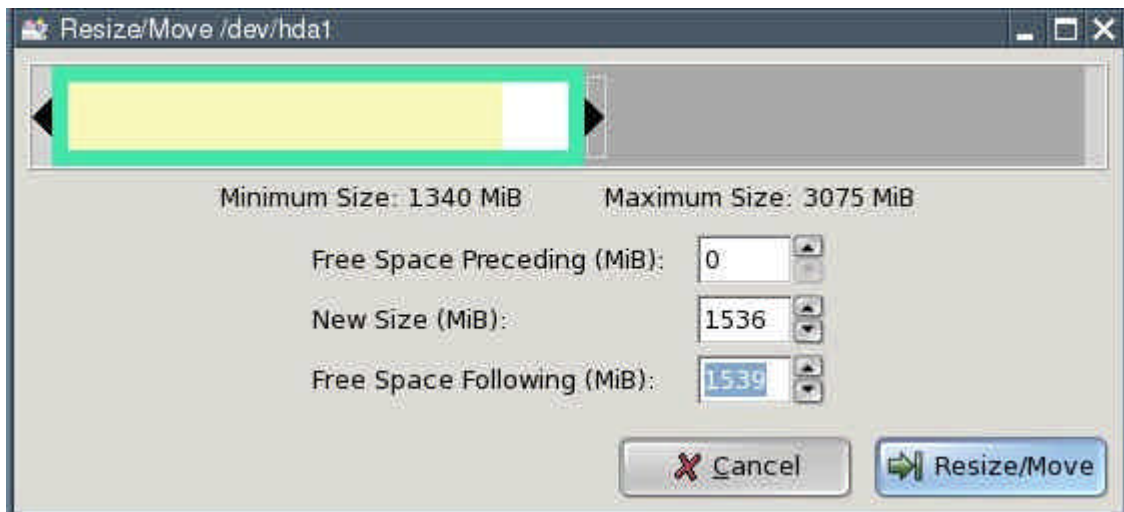
- Start Puppy Linux from CD with the "pfix=ram" boot option (see chapter 3.1).
- Start the Gparted program: "Menu | System | Gparted partition manager".
- First, shrink your Windows partition (NTFS file system). To do this, select the Windows partition /dev/hda1.



Click the "Resize/Move" button.

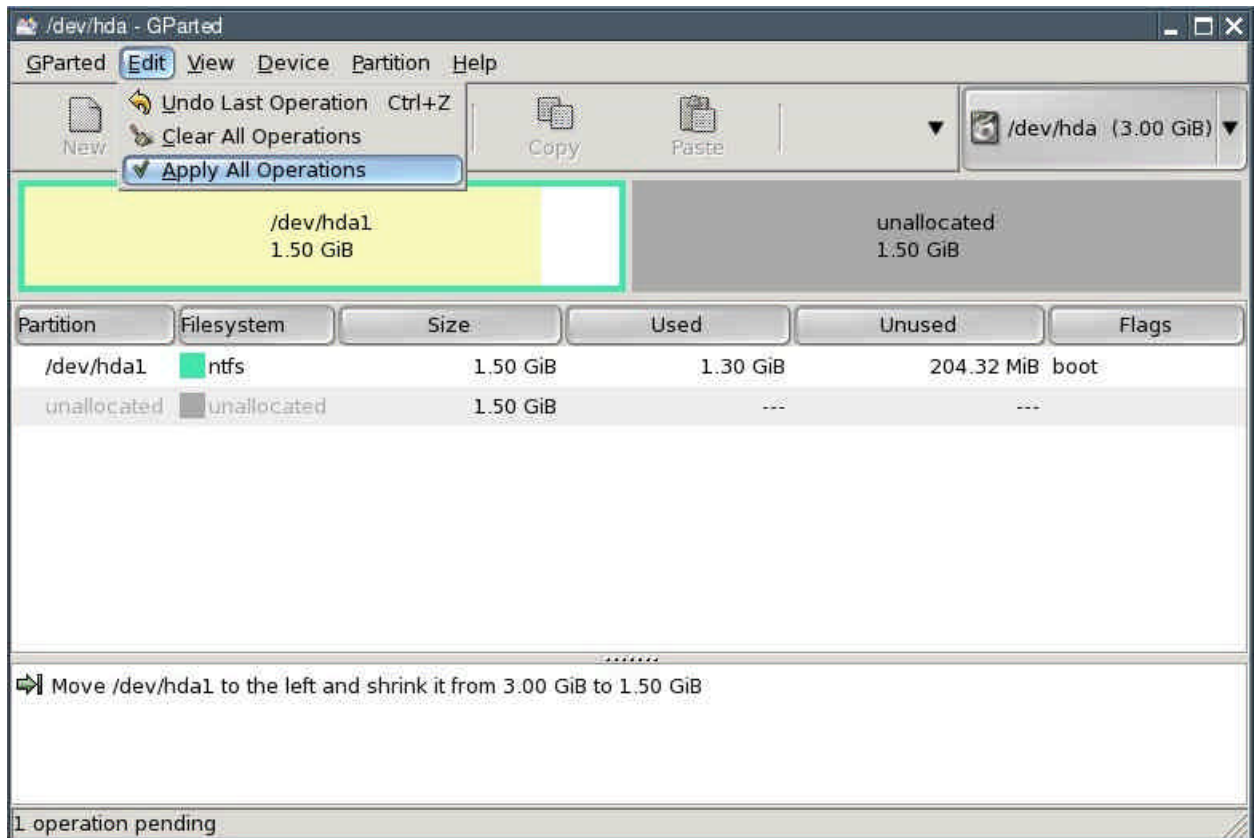


- Reduce the "New Size" value until the "Free Space Following" field shows enough free space following for the new partitions. My test computer's hard disk has only 3 gigabytes; I am using half of that for the new partitions. You probably have a much larger hard drive so your partition sizes can be increased accordingly.

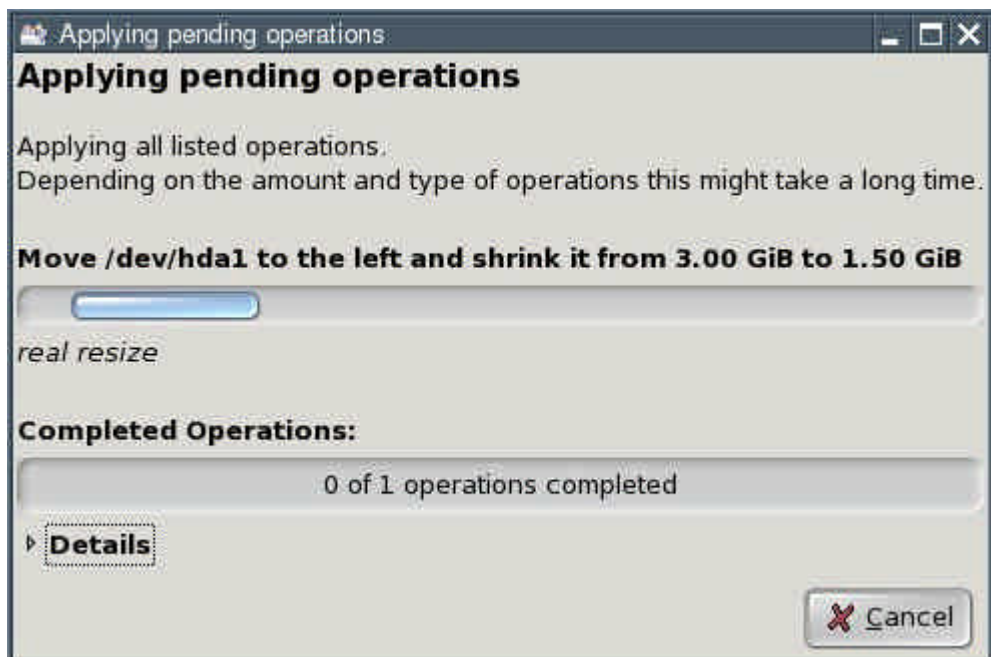
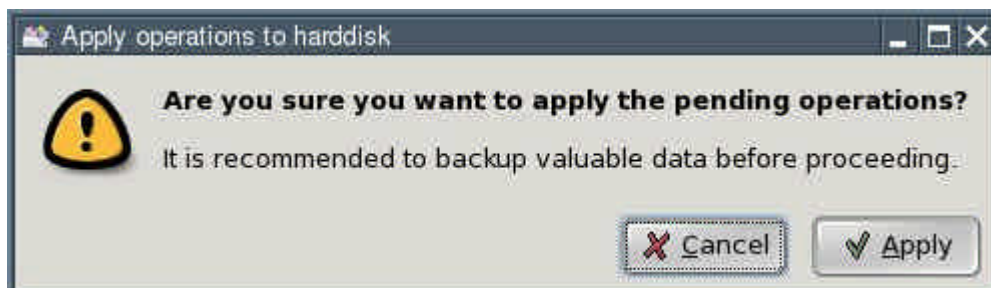


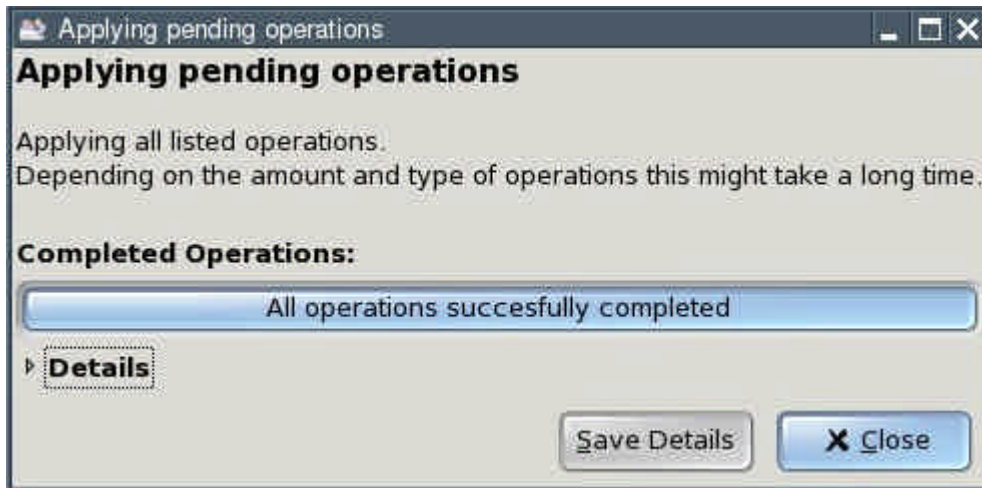
Then press the "Resize/Move" button.

- Next, select "Edit | Apply All Operations" from the menu.



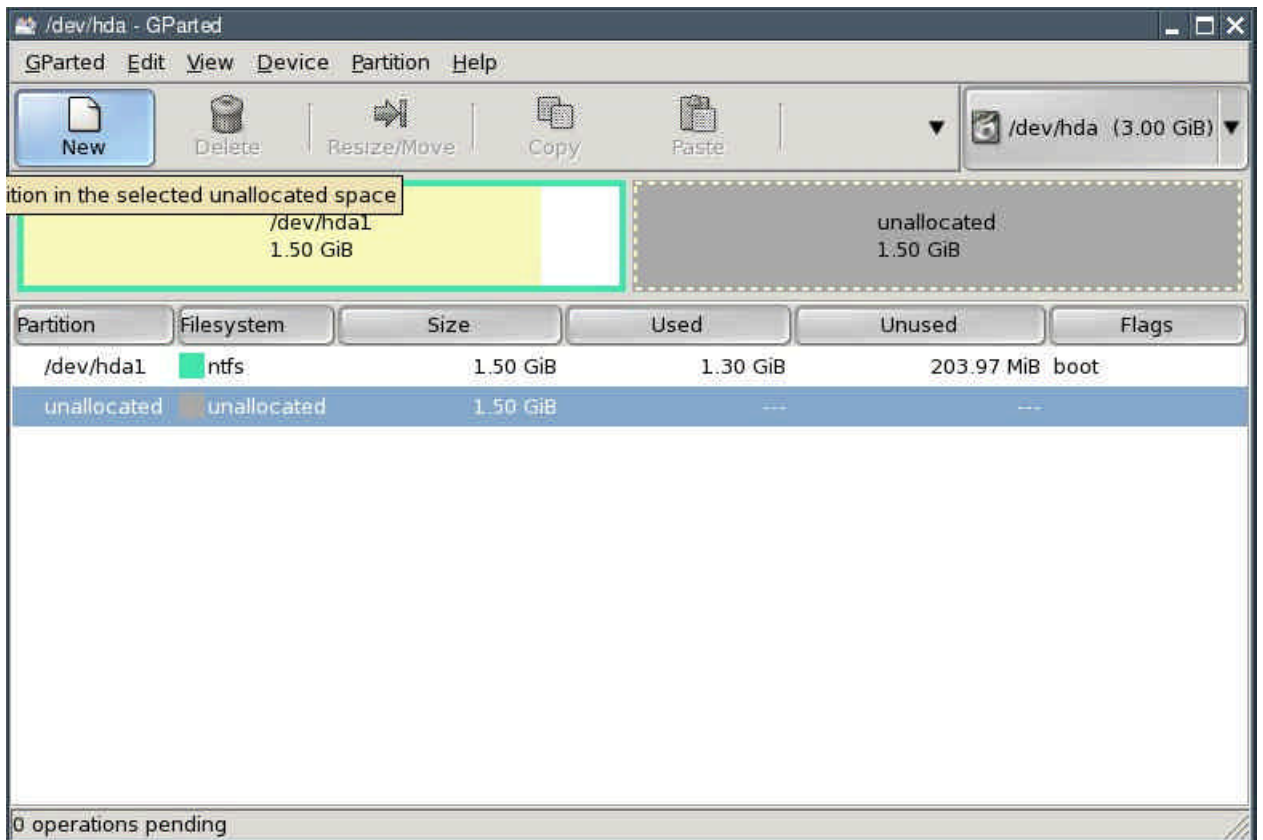
- In the dialogue box that comes up, click the "Apply" button.



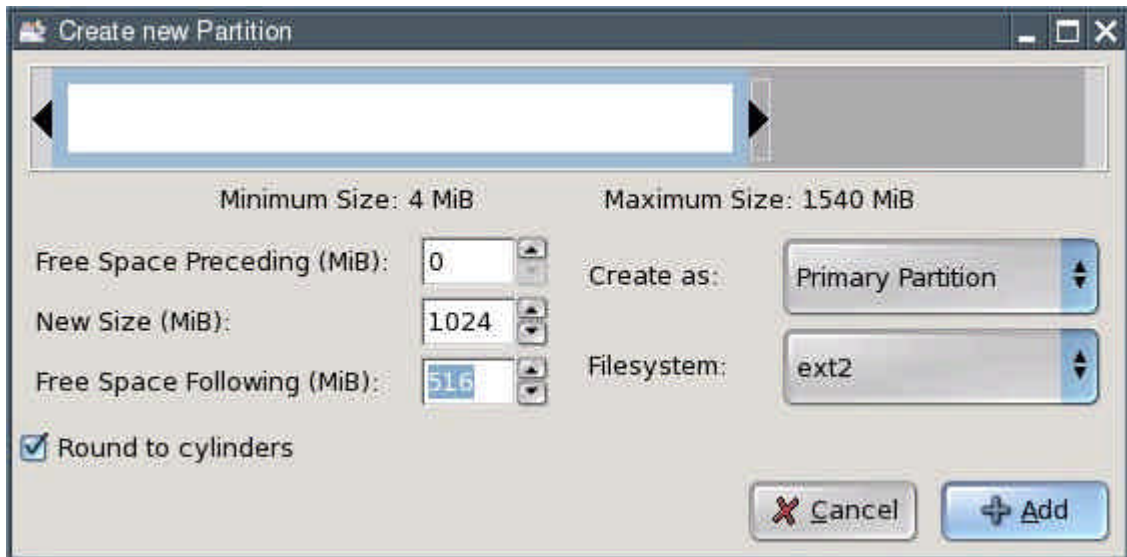


Click the "Close" button. You now have an "unallocated" area on your hard disk.

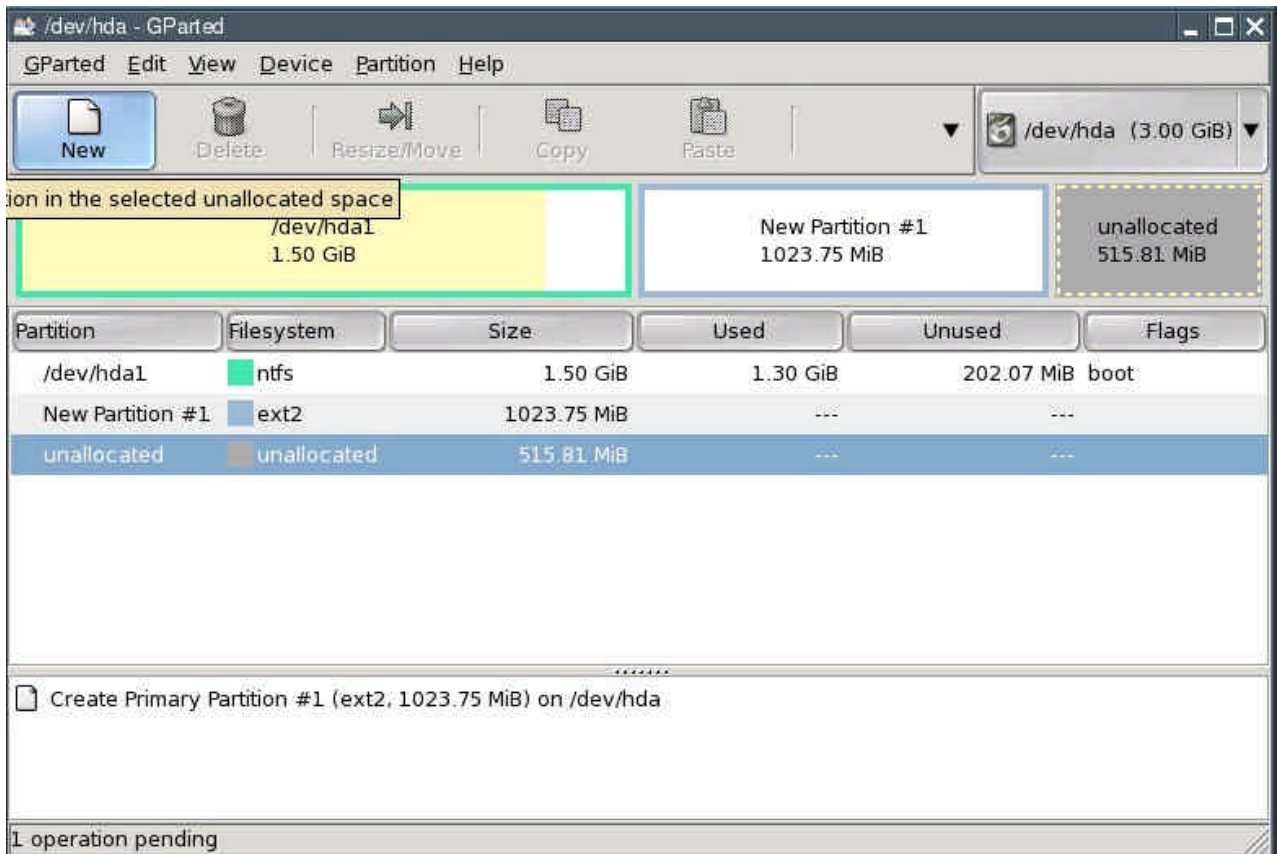
- Select the line saying "unallocated" and click the "New" button.



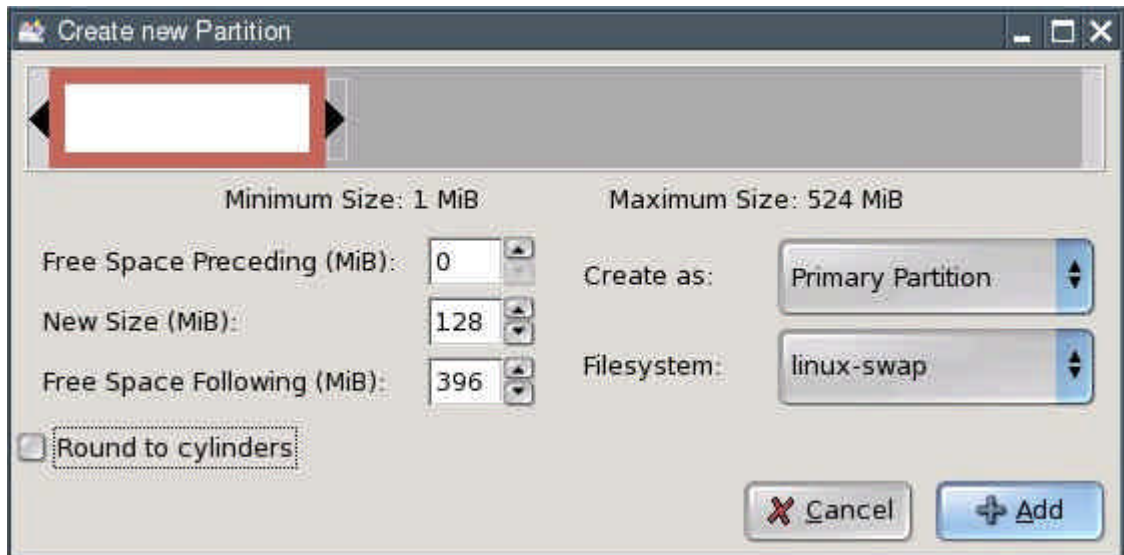
- Enter the size of the second partition in the "New Size" field. This is where Puppy Linux will be installed to. I recommend a size of 1 to 2 gigabytes (i.e., 1024 to 2048 MiB). Select ext2 from the "Filesystem" box and click "Add".



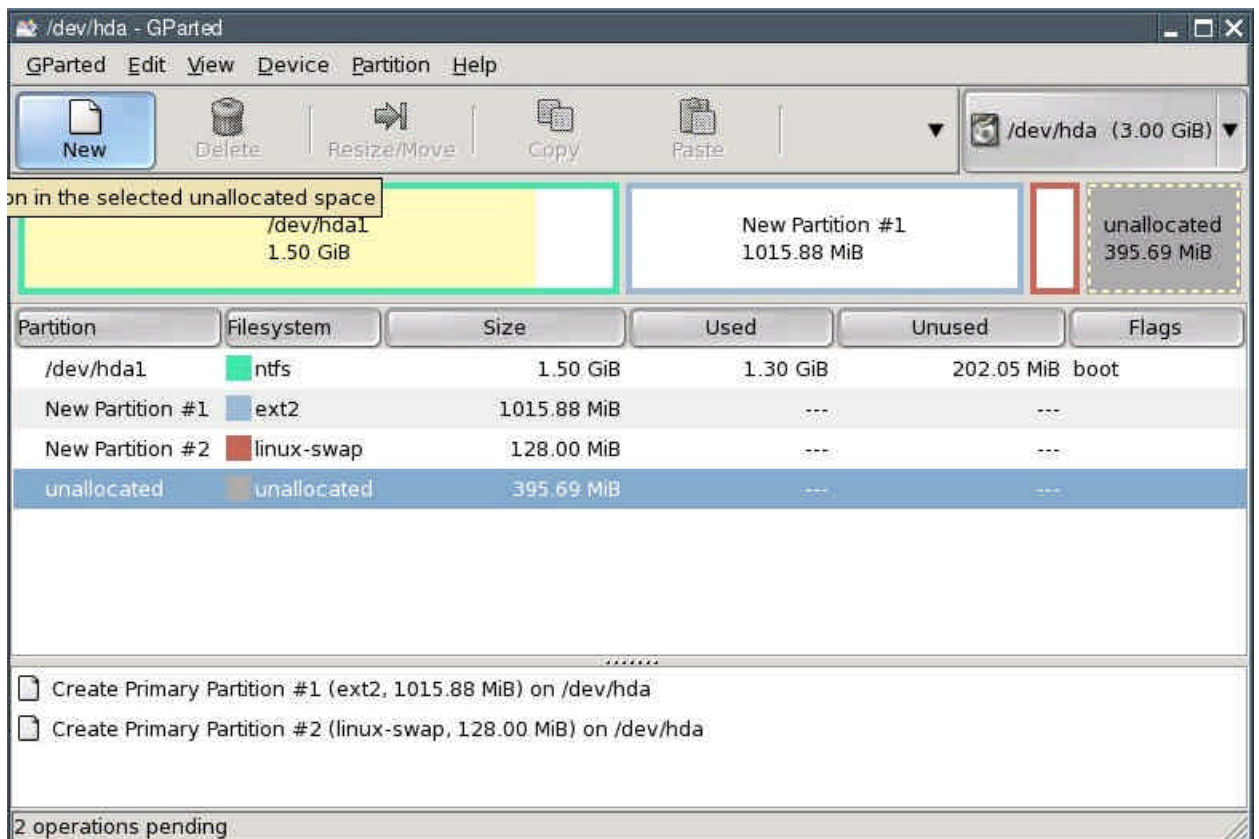
- Again select the line saying "unallocated" and click the "New" button. (You can see where this is going.)



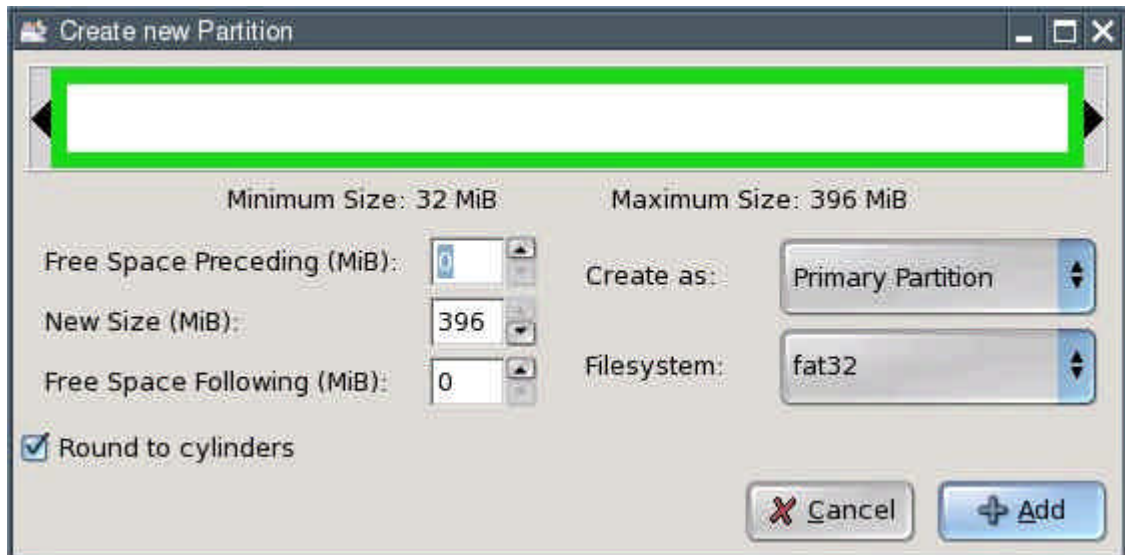
- Enter the size of the third partition in the "New Size" field. This partition is to hold Linux's swap files as a Linux swap partition. You should make it as large as your computer's memory (RAM). With my test computer, this amounts to 128 megabytes (MiB). Select linux-swaps from the "Filesystem" box and click "Add".



- Again select the line saying "unallocated" and click the "New" button.

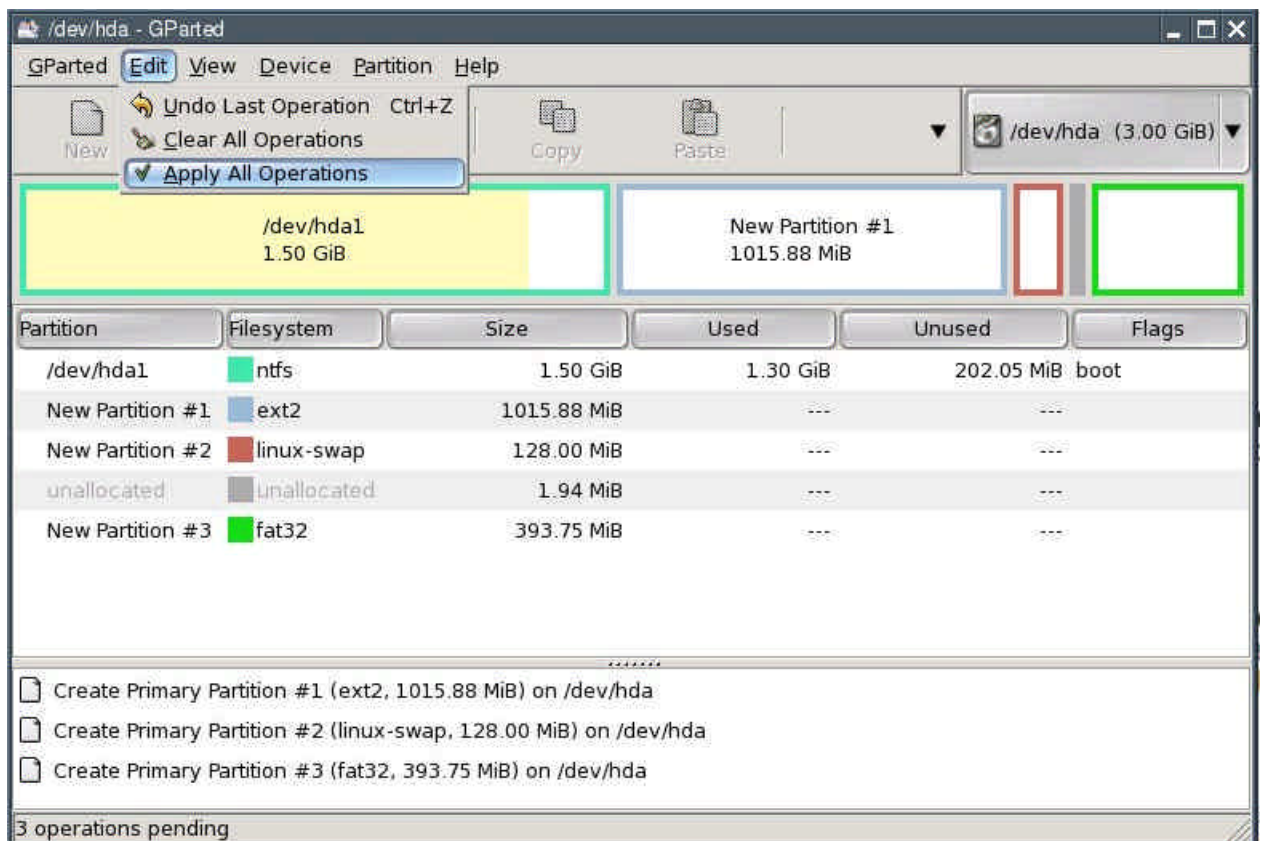


- Enter the size of the fourth partition in the "New Size" field. This partition is meant for shared access to files from Windows and Linux. I recommend a size of about 5 gigabytes (5120 MiB). Since my test computer does not have a large enough hard disk, I am using 396 megabytes (MiB) as an example. Select FAT32 from the "Filesystem" box and click "Add".

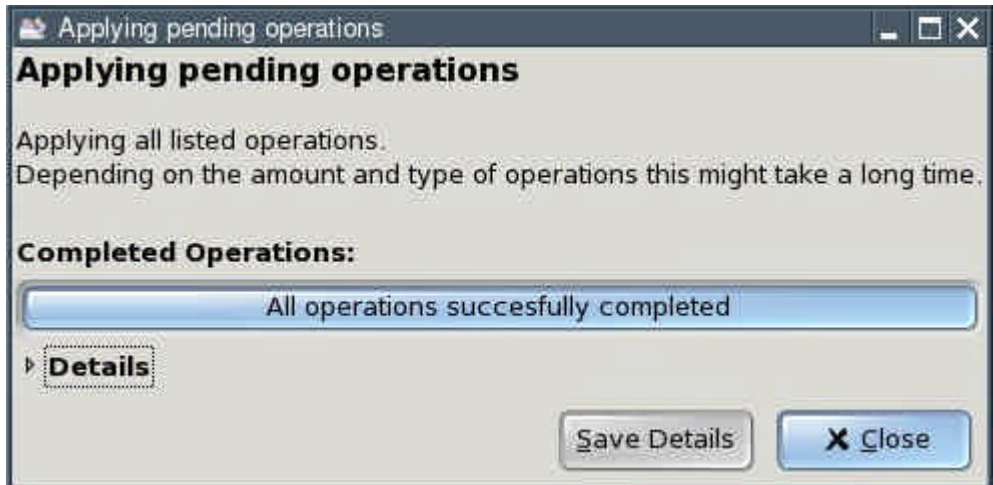


Hint: if you want to create additional partitions (e.g., for very large files under Linux), repeat the process outlined above accordingly. In this case, you may have to create so-called logical partitions. Please consult additional sources if you are unsure about how to do that.

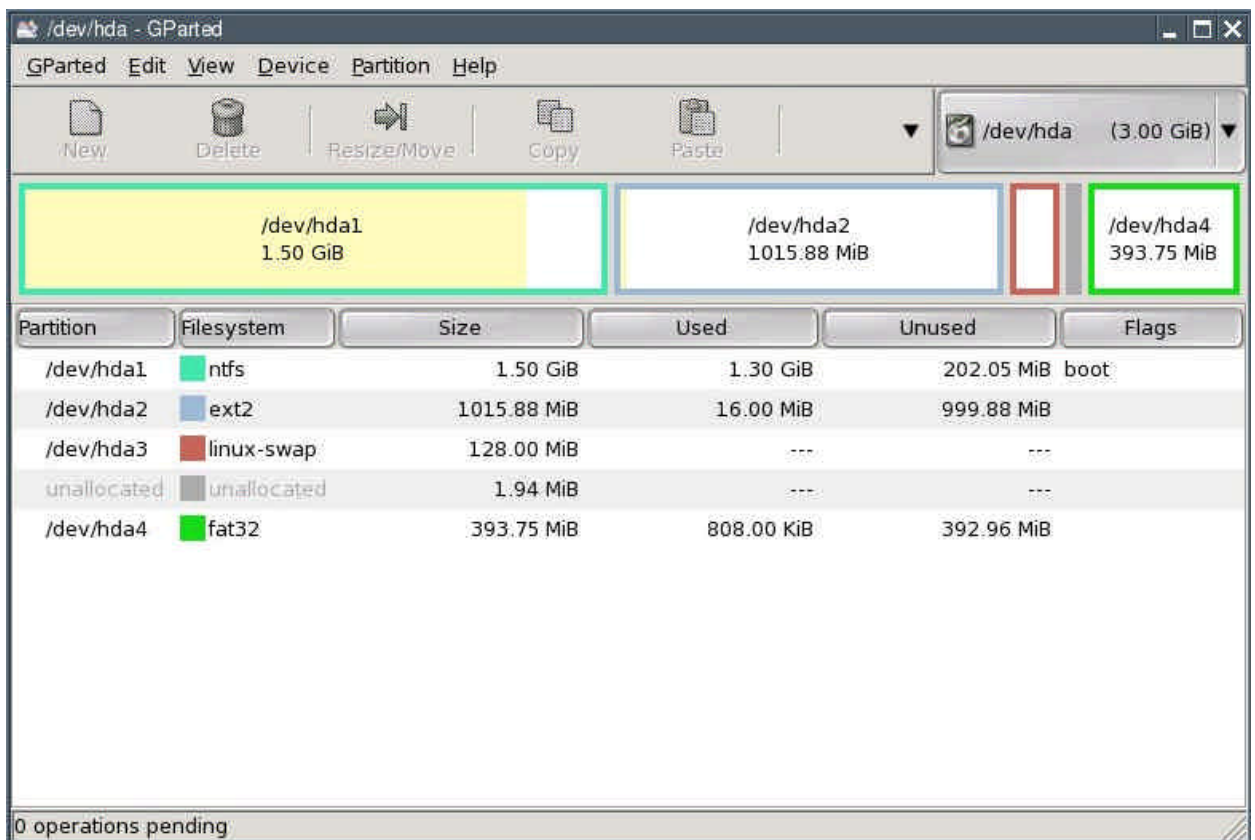
- To actually write the changes to disk, select "Edit | Apply All Operations" from the menu.



- In the dialogue box that comes up, click "Apply".



Click the "Close" button.



- Exit GParted.

4.2 Installation

There are different ways to install Puppy:

- Frugal Installation (Pupy CD image on hard drive)
- Full Installation
- Installation to a USB flash drive
- Installation to a CF card

I recommend Frugal Installation (see chapter 4.2.1), if you have 256 MB RAM or more. If you have less than 256 MB RAM you should choose Full Installation (see chapter 4.2.2).

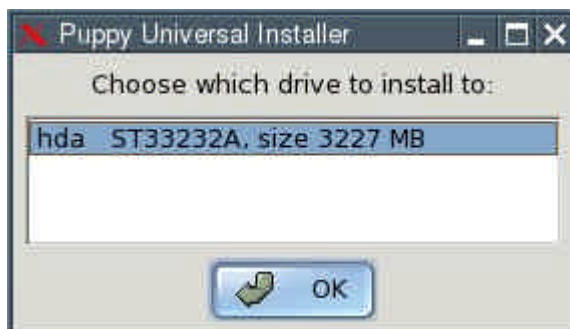
4.2.1 Frugal Installation using Puppy Universal Installer

A Frugal Installation copies the image from the Puppy CD to the hard drive. At bootup, Puppy is loaded into your computer's memory (RAM) just as it is when you boot Puppy from CD, however, loading it from a hard drive is much faster. This way, Frugal Installation combines the advantages of booting from CD-ROM (protection from malware) and a hard drive bootup (speed). Moreover, upgrading to a new Puppy version is very simple - all you have to do is replace some files (see chapter 4.2.2).

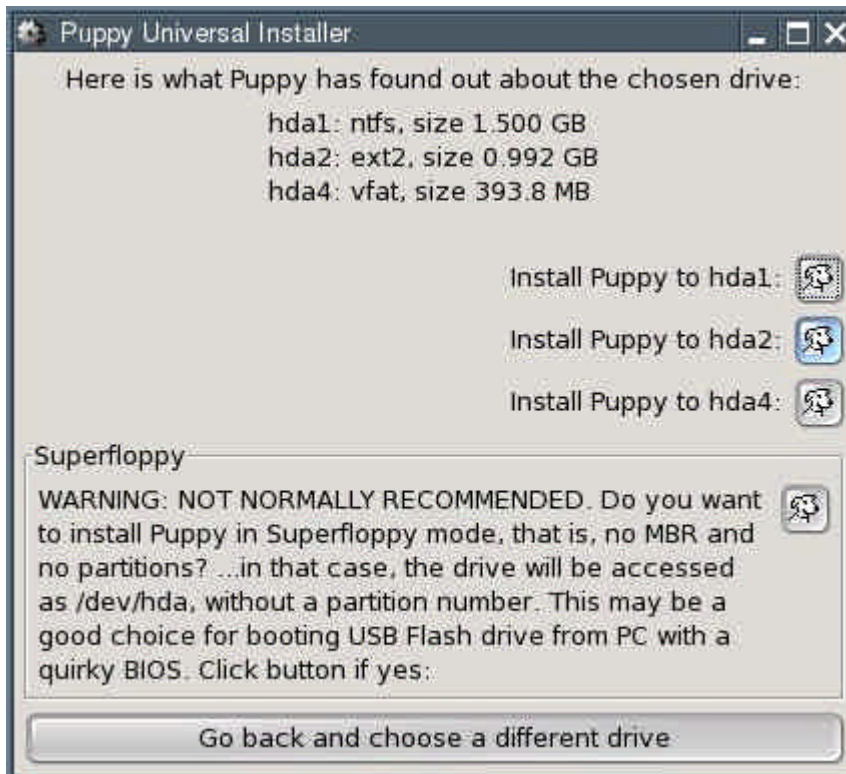
- Start "Menu | Setup | Puppy universal installer". Choose which medium Puppy should be installed to. In this example, I chose the internal hard drive.



- If you have several hard drives, select one.



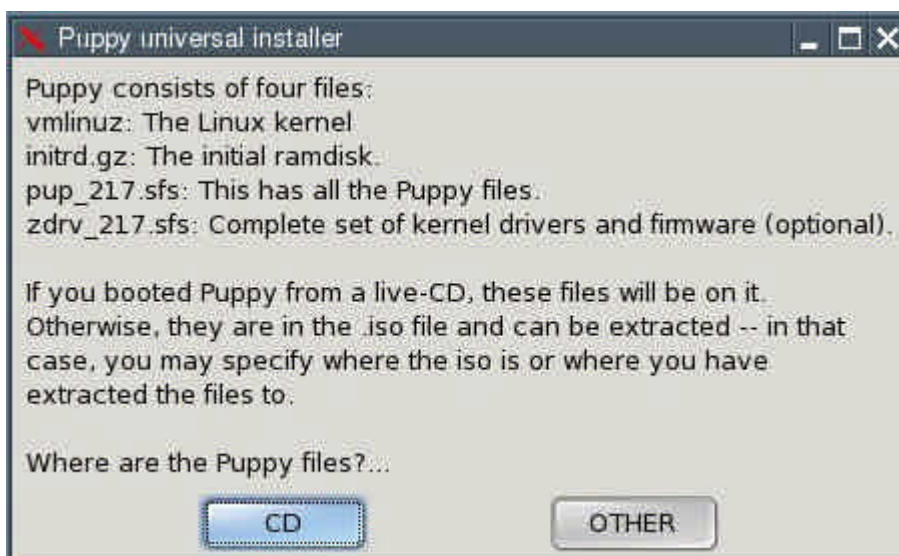
- Next, click on the button next to the partition that you want Puppy to be installed to - /hda2 in this example.



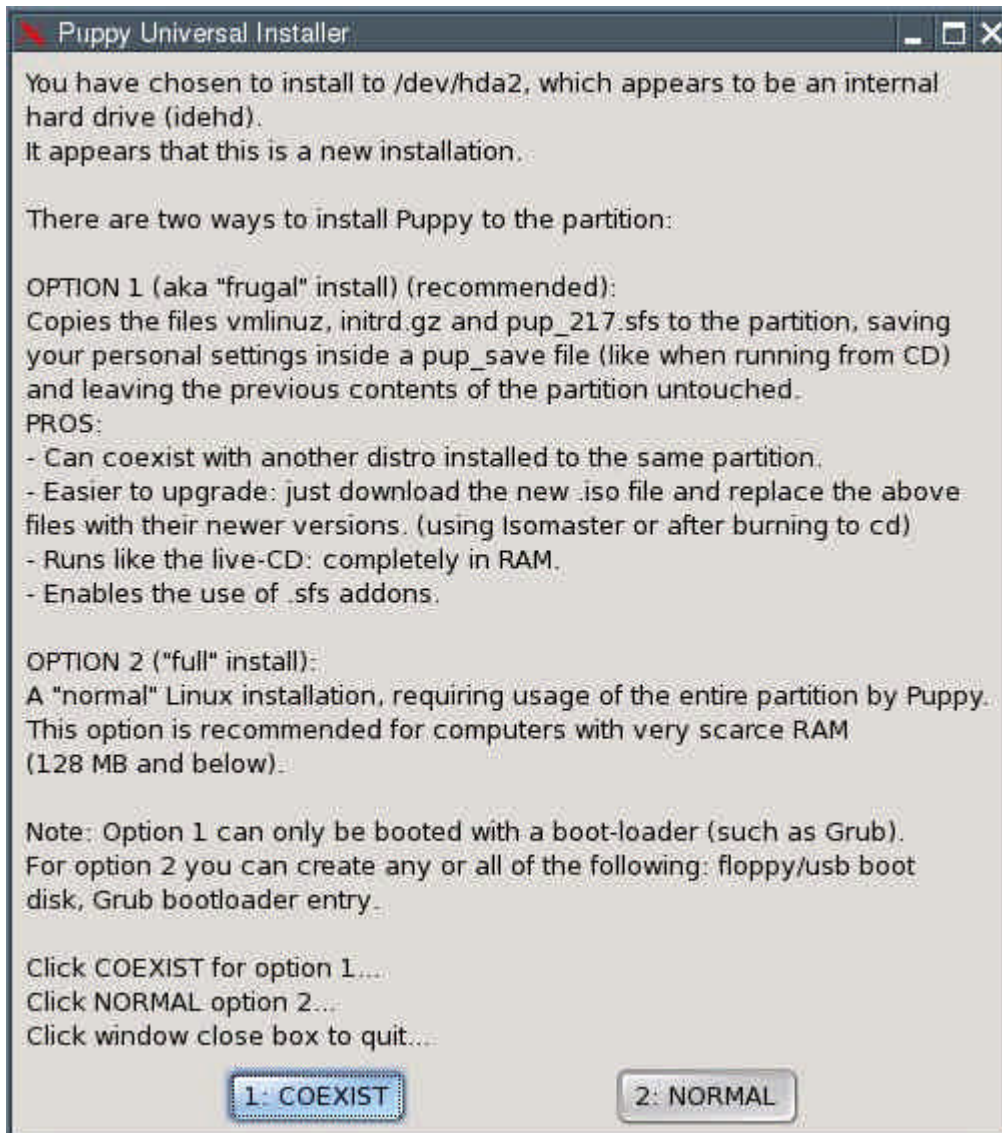
- In the dialogue box, click "OK".



- Specify the medium that Puppy lives on right now. This will probably be a CD. Click the "CD" button.



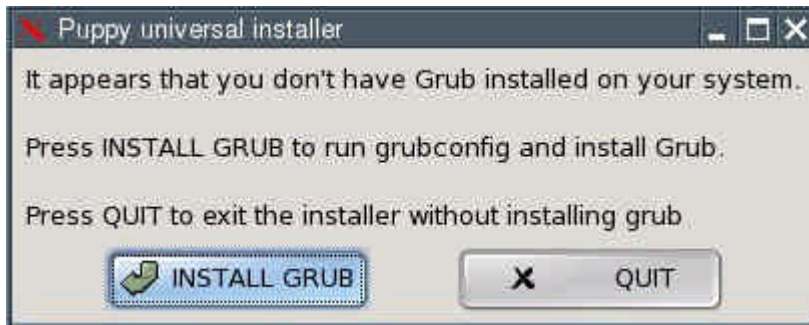
- You now have to decide whether you want a "Frugal" or a "Full" installation (see chapter 4.2.2). In our example, click on the "COEXIST" button.



- The files are now copied from CD to the hard drive. You do not have to click the OK button because the dialogue box goes away once the copy process is complete.



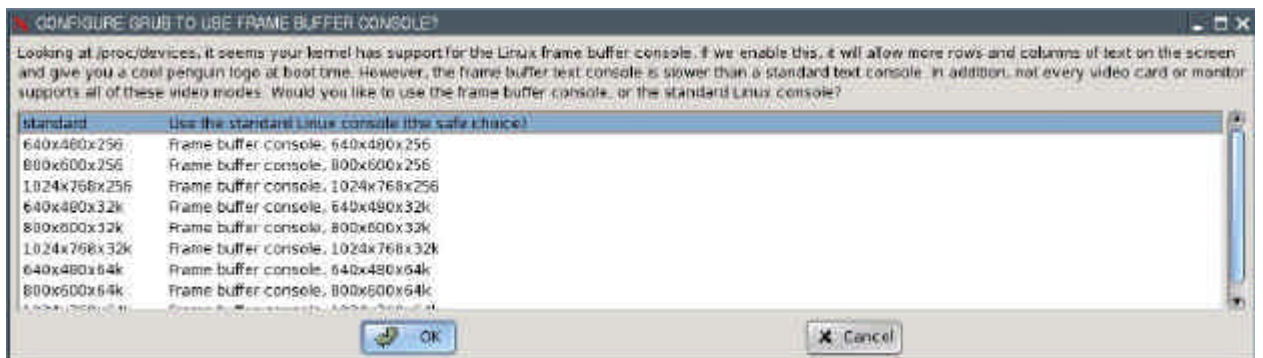
- Since you now have two operating systems on your computer (Windows and Puppy Linux), you need a boot loader. The boot loader is the first program executed after switching the computer on. It enables you to specify which operating system should be started up. If Windows was the only operating system on your computer up to now, you do not have a boot loader. The Puppy Installer can install GRUB as a boot loader for you. To do this, click on "INSTALL GRUB".



- Select "simple installation" and click "OK".



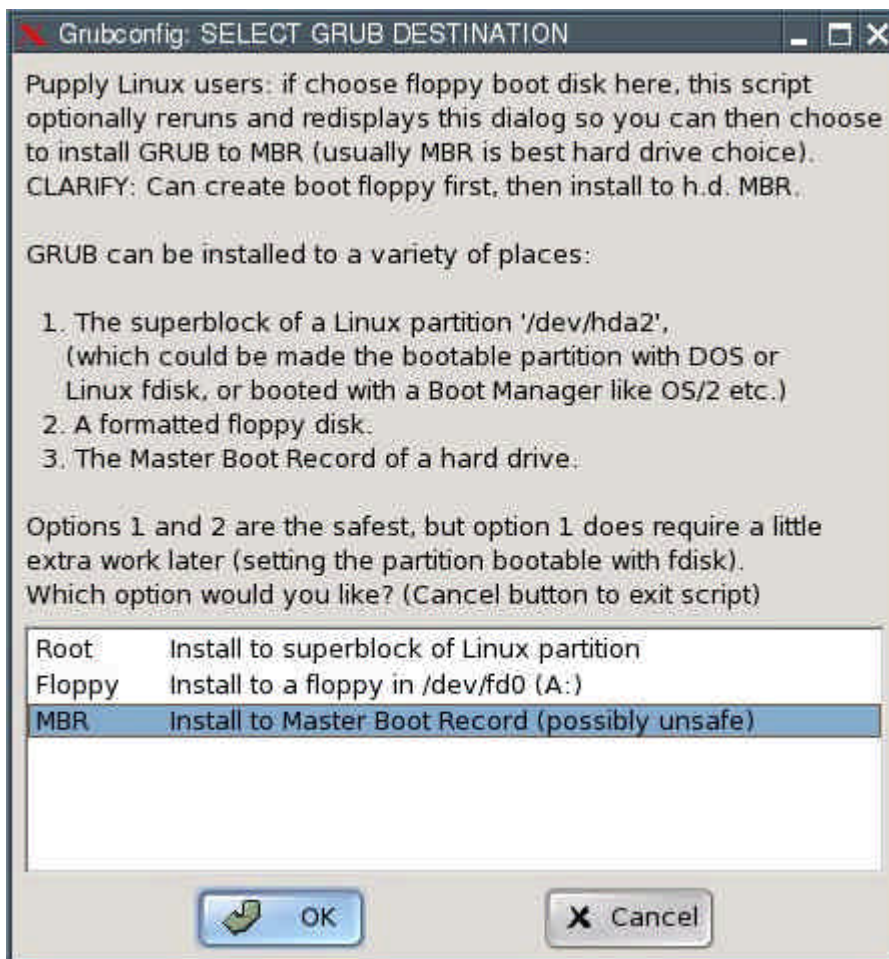
- In the next dialogue box, select "standard" and click "OK".



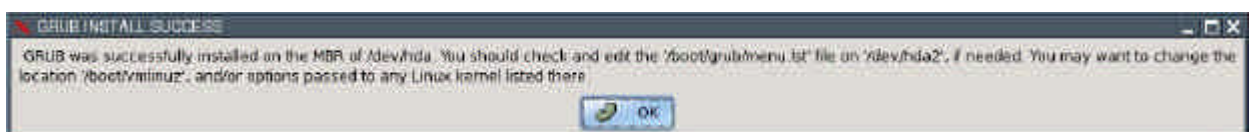
- Now you have to specify where the GRUB boot loader should store its files. These can only be written to a Linux file system partition. Thus, please specify one of the Linux (ext2 or ext3 file system) partitions you created (/dev/hda2 in the example). If you do not have a Linux file system partition yet, you need to create one (see chapter 4.1.3).



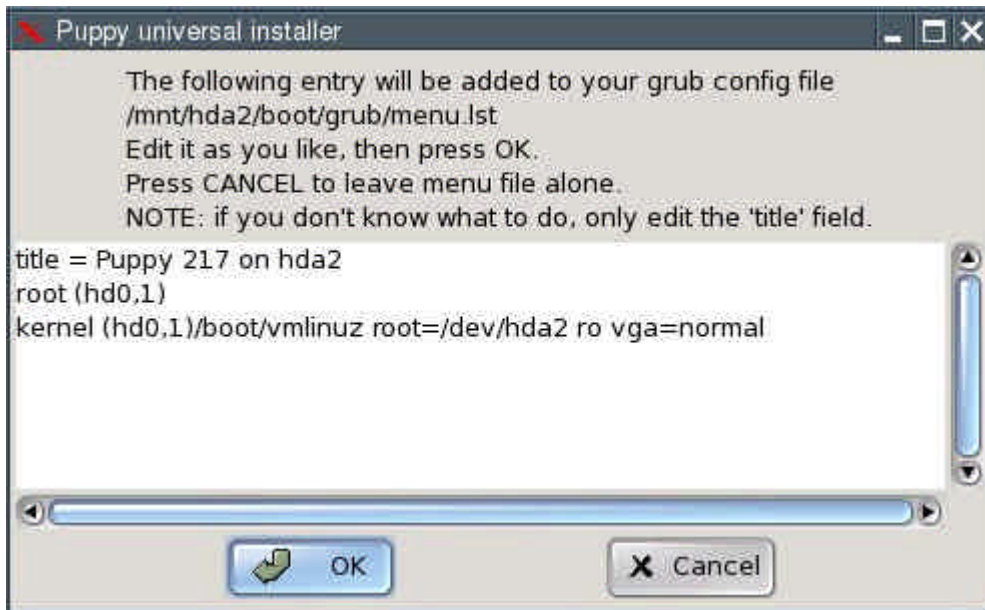
- Now you have to specify where the GRUB boot loader itself should be installed to. Select the Master Boot Record "MBR" and click "OK".



- In the next dialogue box, click "OK".



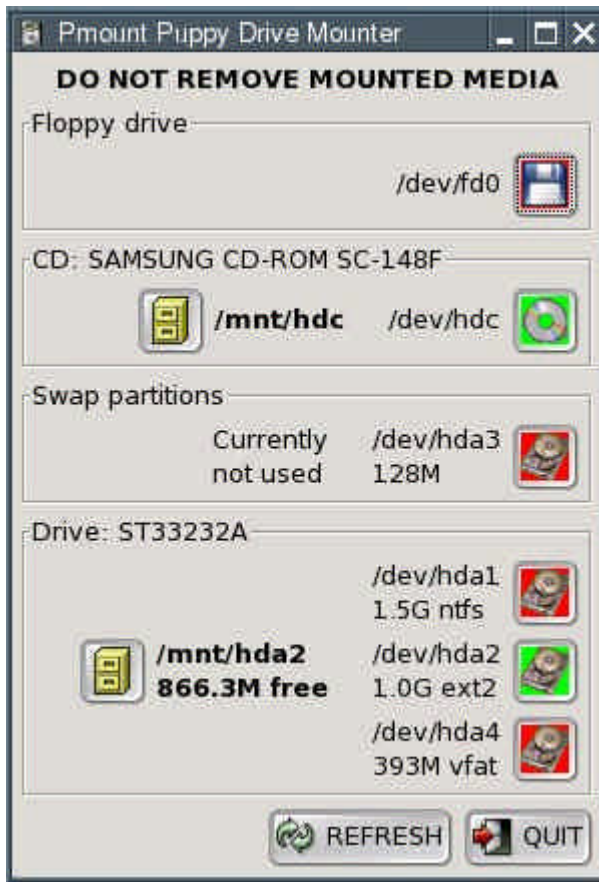
- The next dialogue box shows you the entry that will be added to the file "menu.lst" to boot Puppy Linux. Click "OK".



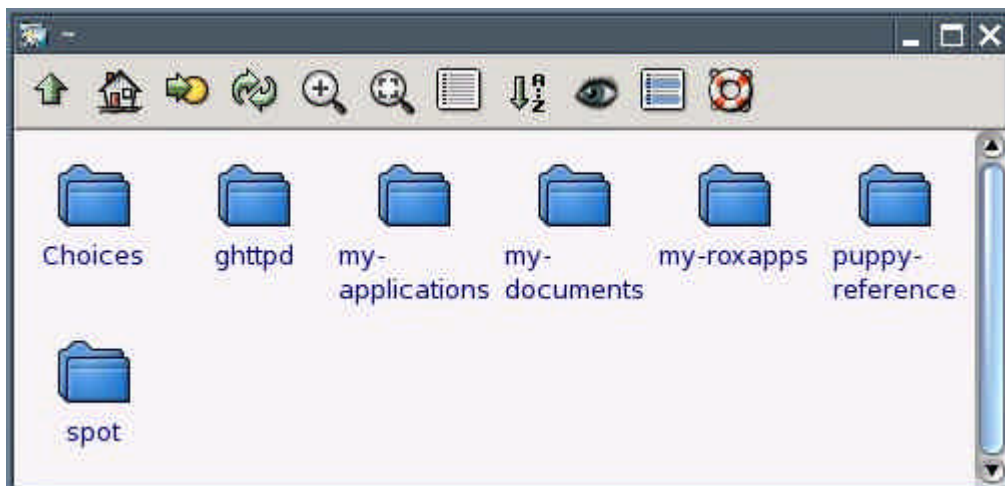
- The installation is complete. What remains to be done is to configure the GRUB boot loader so that Puppy Linux can be booted. This is how to do it:
- Open the file "menu.lst". You will find this file in the /boot/grub directory of the partition you installed the GRUB files to (/dev/hda2 in our example). For Linux newbies, I include detailed instructions on how to find and open this file. More advanced users can skip ahead to where menu.lst gets edited.
- Start "Menu | Filesystem | Pmount mount/unmount drives" and click on the red hard disk symbol next to "/dev/hda2".



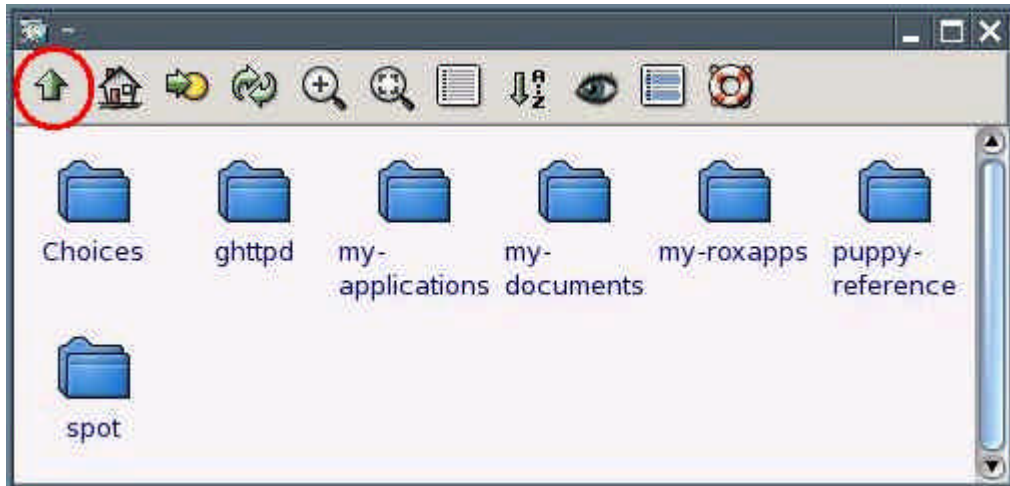
- The symbol changes colour from red to green.



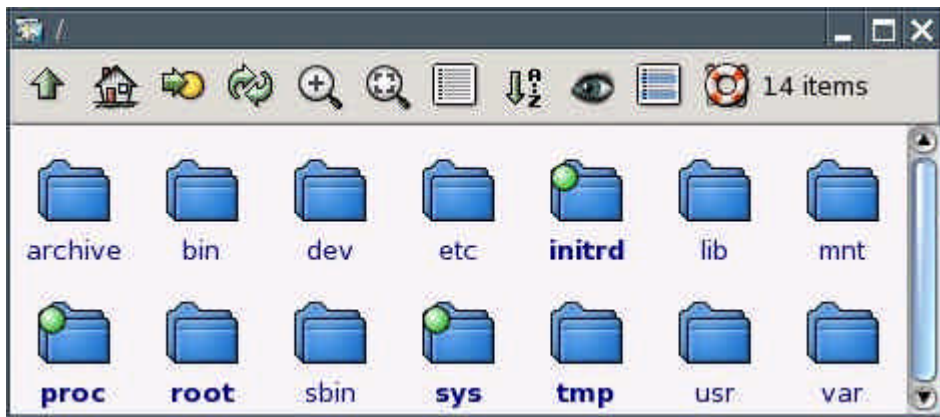
- Start "Menu | Filesystem | ROX-File file manager".



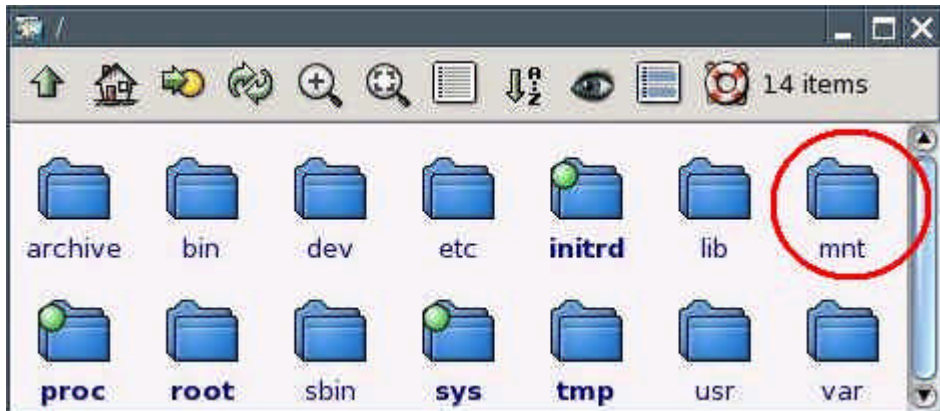
- Click on the arrow in the upper left corner.



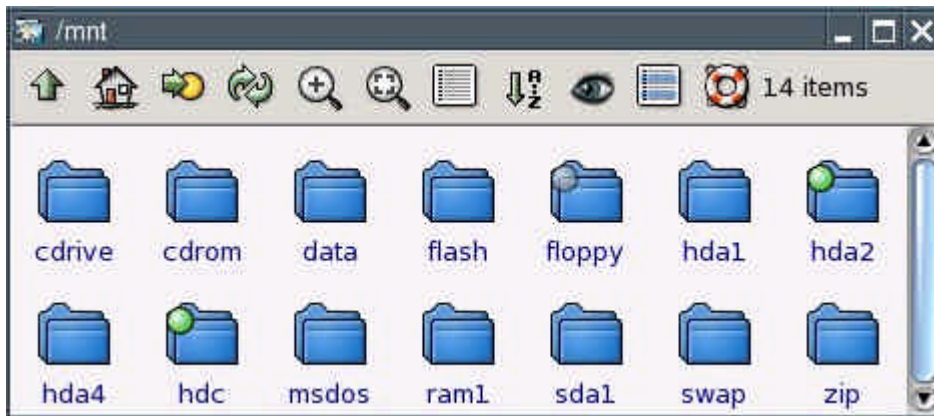
You have gone up one directory.



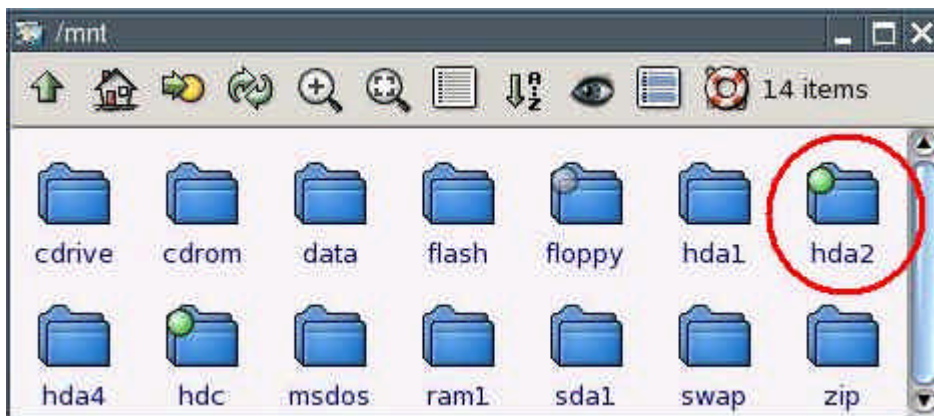
- Click on the folder called "mnt".



You are now inside the "mnt" folder.



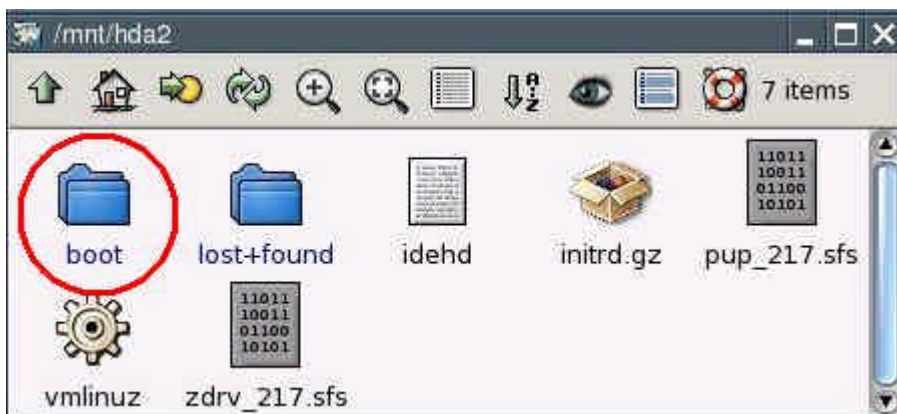
- Click on the folder called "hda2".



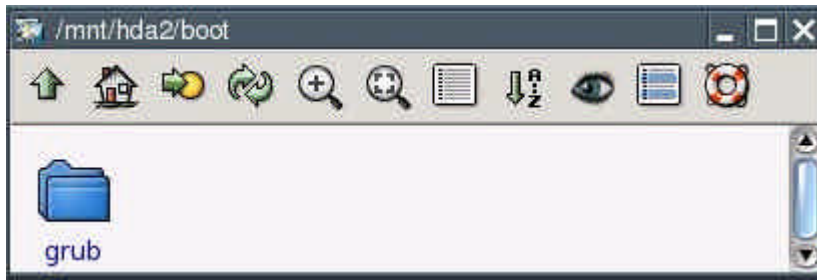
You are now inside the "hda2" folder.



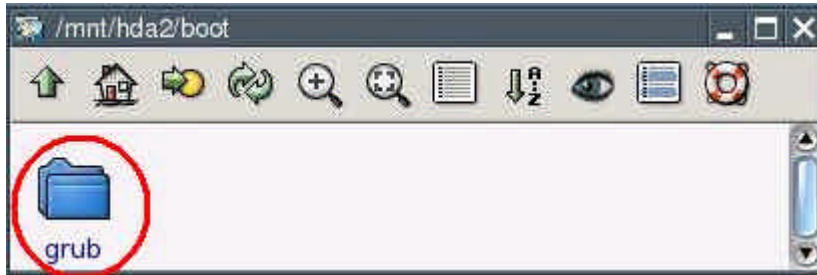
- Click on the folder called "boot".



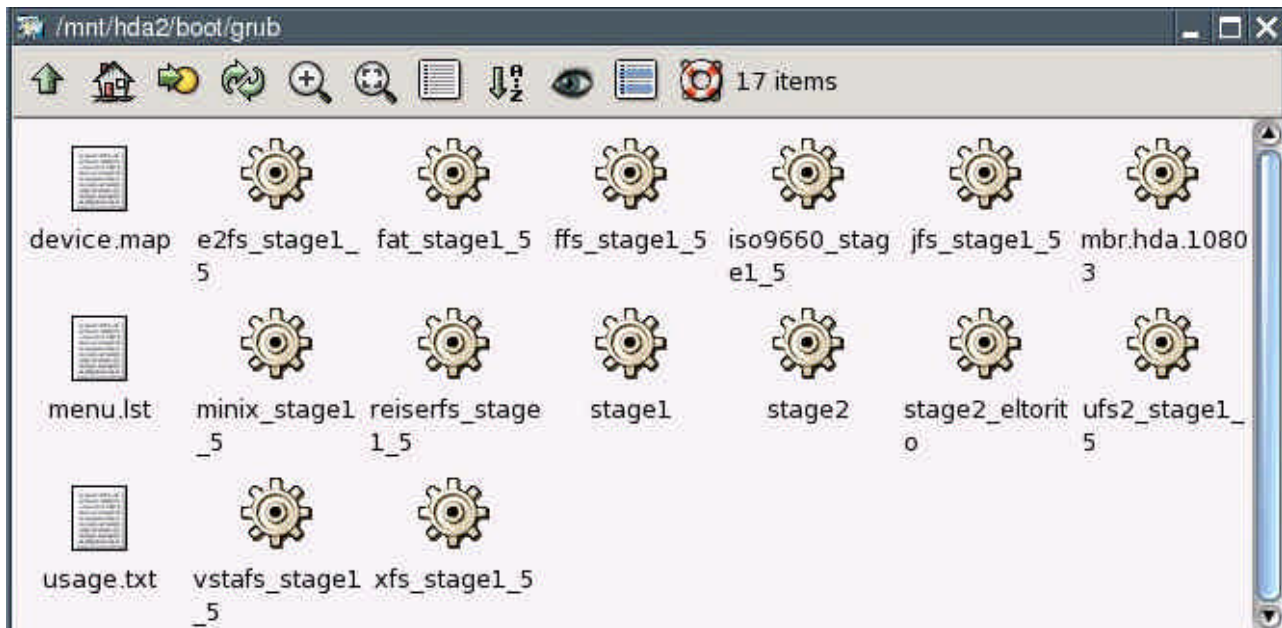
You are now inside the "boot" folder.



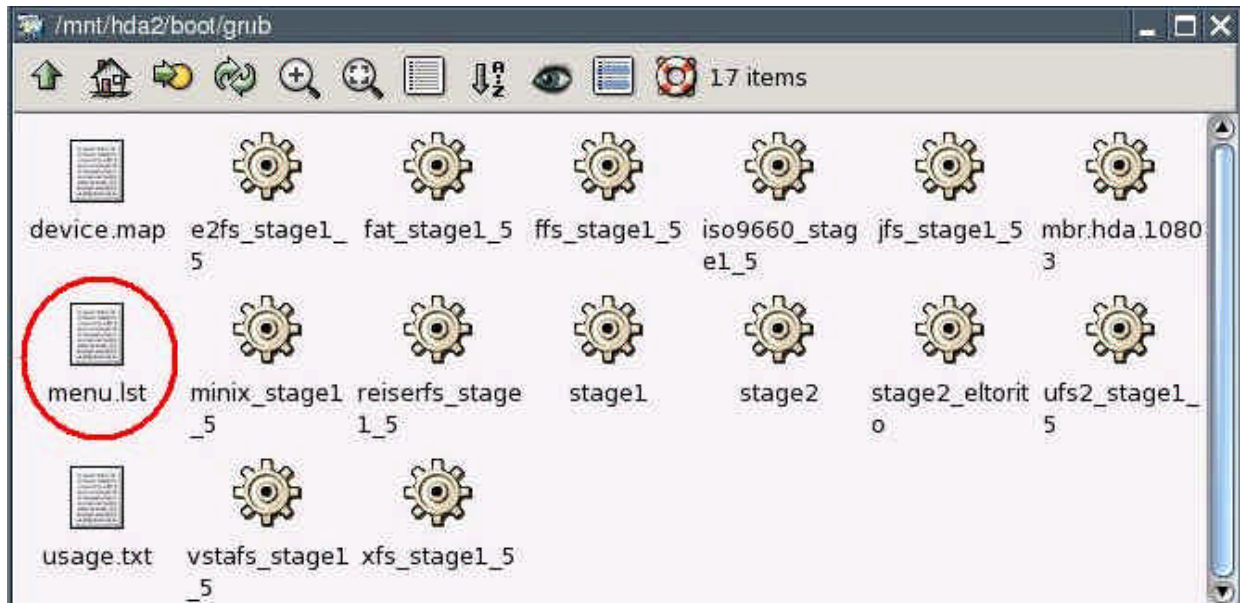
- Click on the folder called "grub".



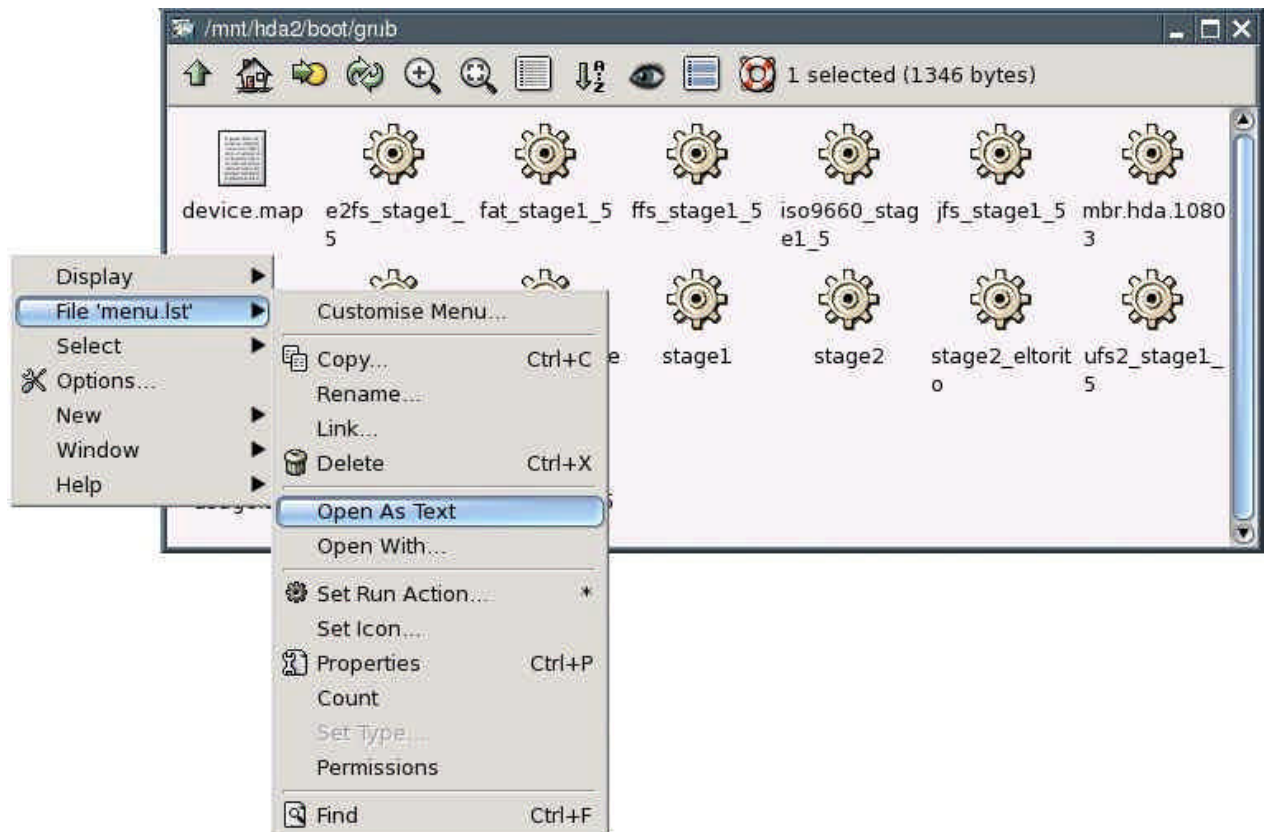
You are now inside the "grub" folder.



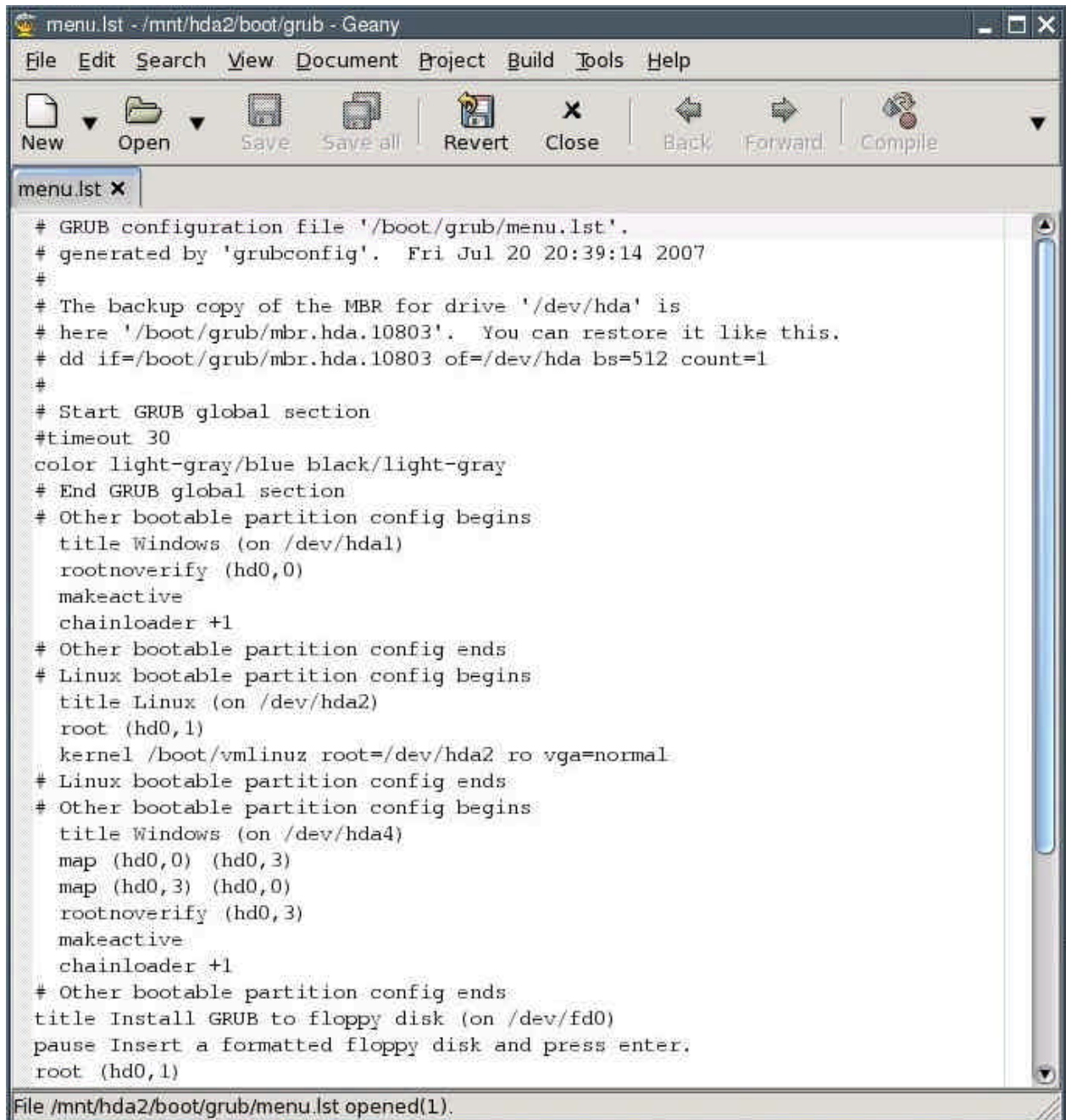
- Use the right mouse button to click on the file called "menu.lst".



>From the context menu that pops up, select "File menu.lst | Open As Text".



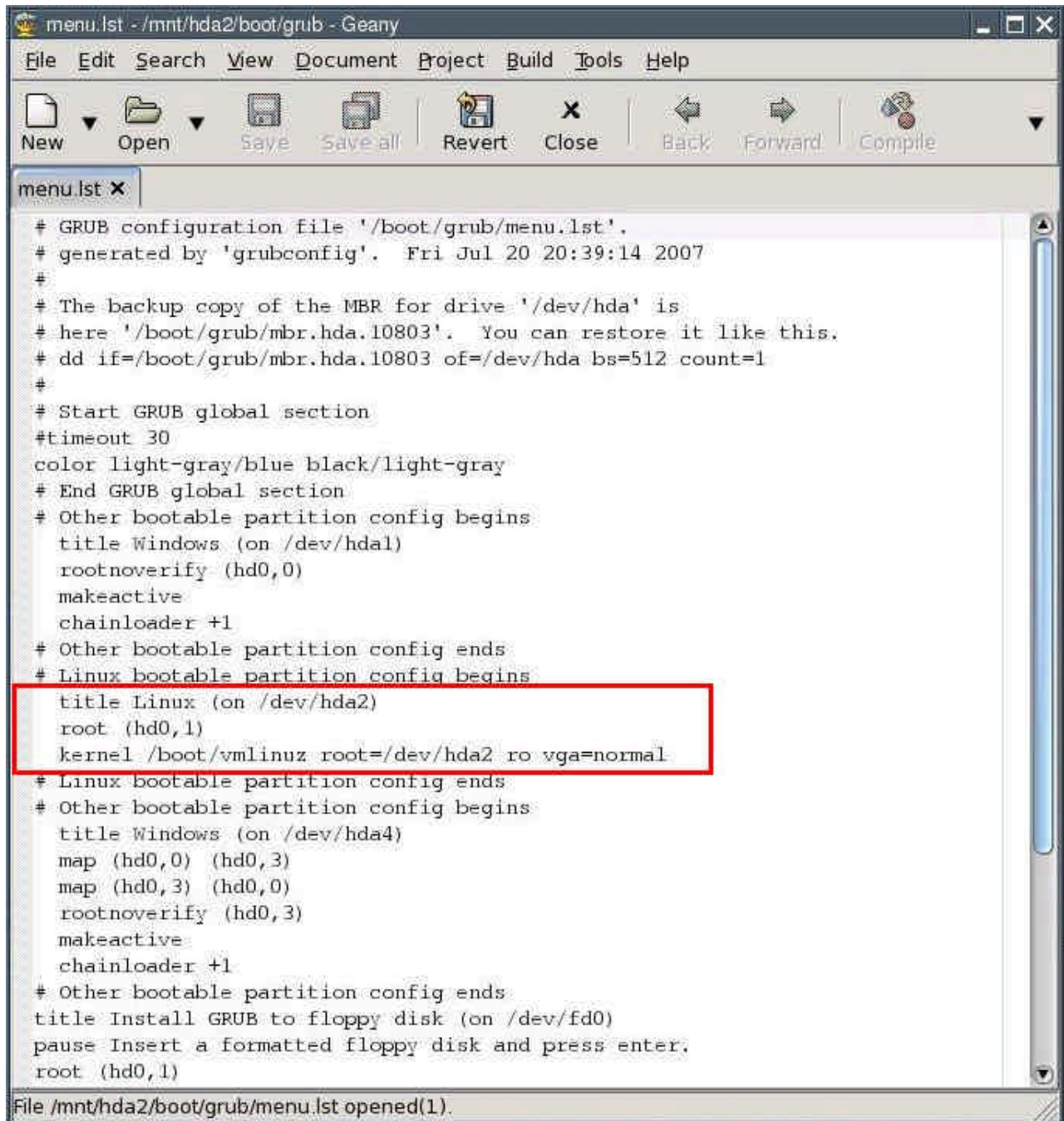
- You can now see the contents of the menu.lst file.



```
# GRUB configuration file '/boot/grub/menu.lst'.
# generated by 'grubconfig'.  Fri Jul 20 20:39:14 2007
#
# The backup copy of the MBR for drive '/dev/hda' is
# here '/boot/grub/mbr.hda.10803'.  You can restore it like this.
# dd if=/boot/grub/mbr.hda.10803 of=/dev/hda bs=512 count=1
#
# Start GRUB global section
#timeout 30
color light-gray/blue black/light-gray
# End GRUB global section
# Other bootable partition config begins
title Windows (on /dev/hda1)
rootnoverify (hd0,0)
makeactive
chainloader +1
# Other bootable partition config ends
# Linux bootable partition config begins
title Linux (on /dev/hda2)
root (hd0,1)
kernel /boot/vmlinuz root=/dev/hda2 ro vga=normal
# Linux bootable partition config ends
# Other bootable partition config begins
title Windows (on /dev/hda4)
map (hd0,0) (hd0,3)
map (hd0,3) (hd0,0)
rootnoverify (hd0,3)
makeactive
chainloader +1
# Other bootable partition config ends
title Install GRUB to floppy disk (on /dev/fd0)
pause Insert a formatted floppy disk and press enter.
root (hd0,1)
```

File /mnt/hda2/boot/grub/menu.lst opened(1).

- Edit the file at this point:

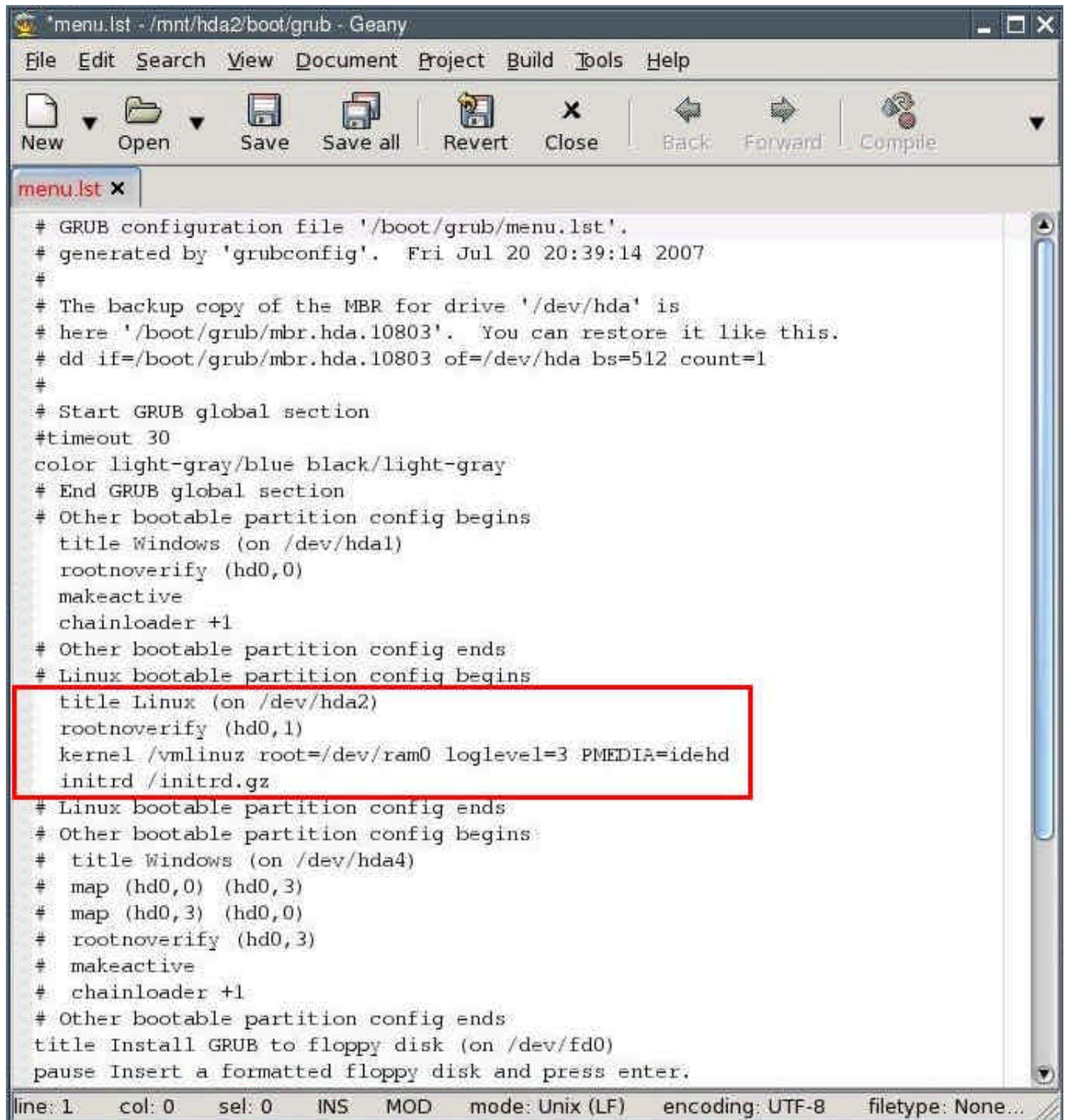


```
menu.lst - /mnt/hda2/boot/grub - Geany
File Edit Search View Document Project Build Tools Help
New Open Save Save all Revert Close Back Forward Compile
menu.lst x
# GRUB configuration file '/boot/grub/menu.lst'.
# generated by 'grubconfig'.  Fri Jul 20 20:39:14 2007
#
# The backup copy of the MBR for drive '/dev/hda' is
# here '/boot/grub/mbr.hda.10803'.  You can restore it like this.
# dd if=/boot/grub/mbr.hda.10803 of=/dev/hda bs=512 count=1
#
# Start GRUB global section
#timeout 30
color light-gray/blue black/light-gray
# End GRUB global section
# Other bootable partition config begins
title Windows (on /dev/hda1)
rootnoverify (hd0,0)
makeactive
chainloader +1
# Other bootable partition config ends
# Linux bootable partition config begins
title Linux (on /dev/hda2)
root (hd0,1)
kernel /boot/vmlinuz root=/dev/hda2 ro vga=normal
# Linux bootable partition config ends
# Other bootable partition config begins
title Windows (on /dev/hda4)
map (hd0,0) (hd0,3)
map (hd0,3) (hd0,0)
rootnoverify (hd0,3)
makeactive
chainloader +1
# Other bootable partition config ends
title Install GRUB to floppy disk (on /dev/fd0)
pause Insert a formatted floppy disk and press enter.
root (hd0,1)
File /mnt/hda2/boot/grub/menu.lst opened(1).
```

```
title = Puppy Linux (on /dev/hda2)
rootnoverify (hd0,1)
kernel /vmlinuz root=/dev/ram0 loglevel=3 pmedia=idehd
initrd /initrd.gz
```

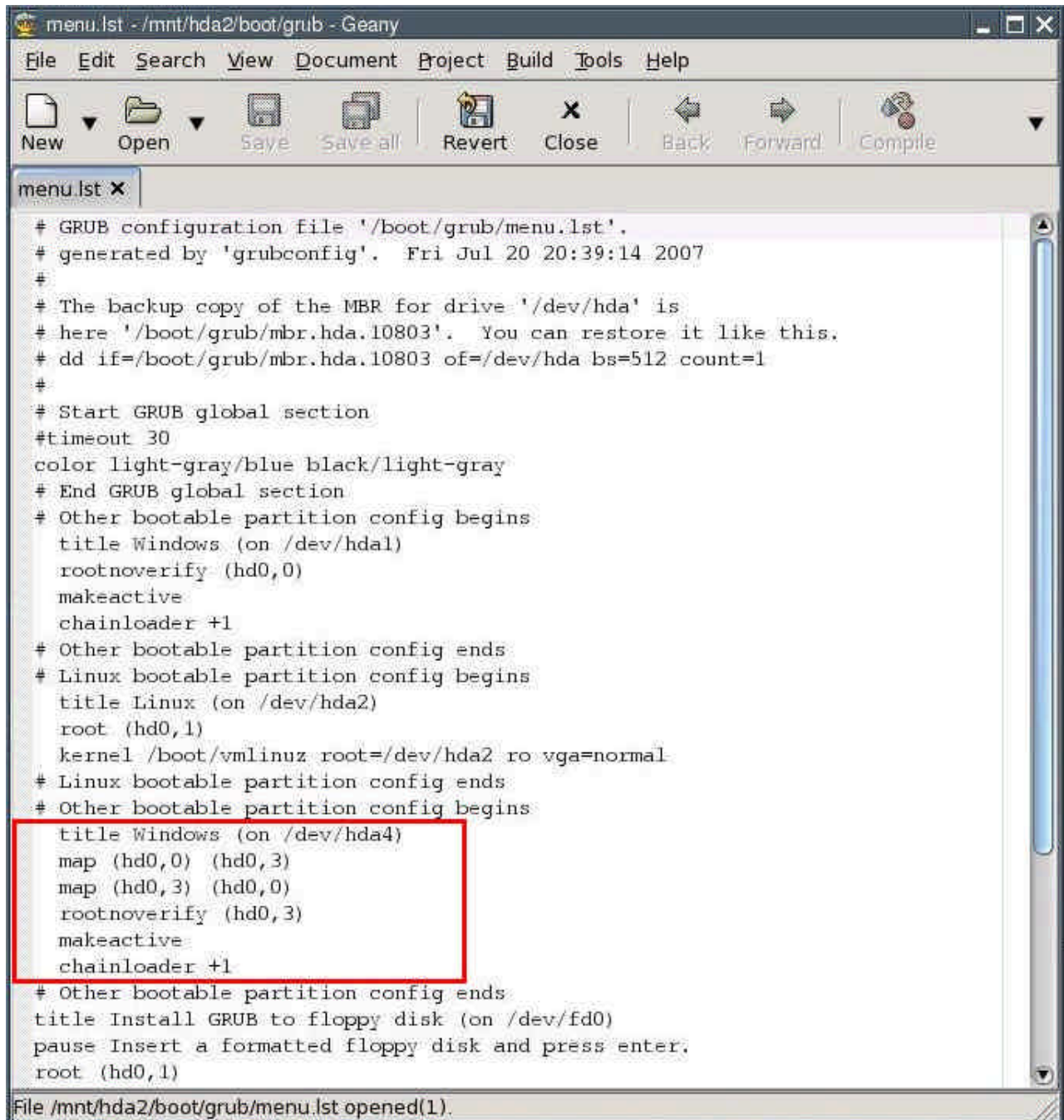
(Notice: depending on what medium you boot from, you have to set the pmedia parameter to one of usbflash usbhdd usbcd ideflash idehd idecd idezip satahd scsihd scsicc. If you did not install the GRUB files to the /dev/hda2 partition, you need to change the rootnoverify parameter as well - partition number and Linux drive letter minus one, so if the GRUB files are on /dev/hdb3, make it "rootnoverify (hd1,2)".)

The bit you changed in the file should now look like this:



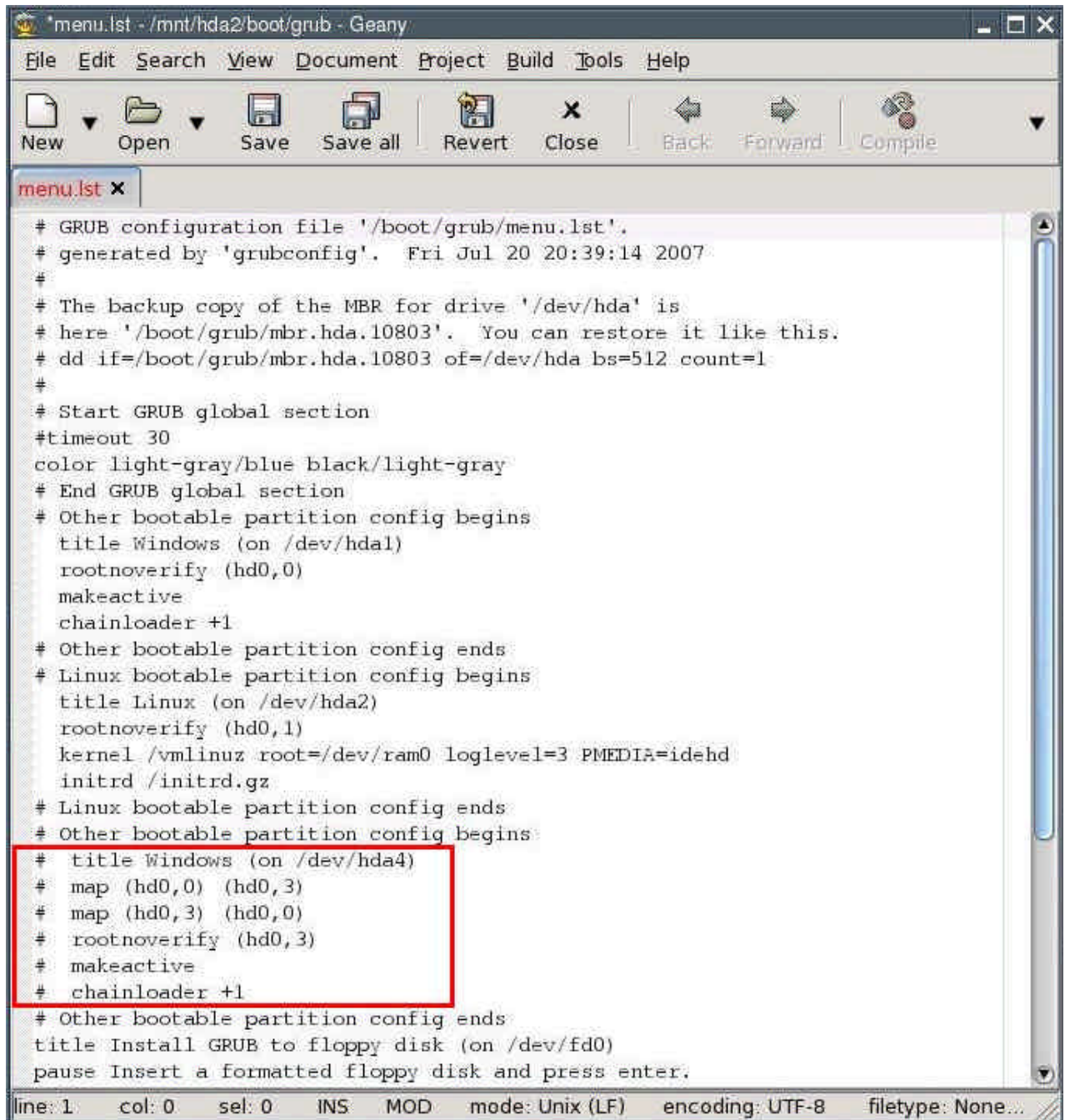
```
*menu.lst - /mnt/hda2/boot/grub - Geany
File Edit Search View Document Project Build Tools Help
New Open Save Save all Revert Close Back Forward Compile
menu.lst x
# GRUB configuration file '/boot/grub/menu.lst'.
# generated by 'grubconfig'.  Fri Jul 20 20:39:14 2007
#
# The backup copy of the MBR for drive '/dev/hda' is
# here '/boot/grub/mbr.hda.10803'.  You can restore it like this.
# dd if=/boot/grub/mbr.hda.10803 of=/dev/hda bs=512 count=1
#
# Start GRUB global section
#timeout 30
color light-gray/blue black/light-gray
# End GRUB global section
# Other bootable partition config begins
title Windows (on /dev/hda1)
rootnoverify (hd0,0)
makeactive
chainloader +1
# Other bootable partition config ends
# Linux bootable partition config begins
title Linux (on /dev/hda2)
rootnoverify (hd0,1)
kernel /vmlinuz root=/dev/ram0 loglevel=3 PMEDIA=idehd
initrd /initrd.gz
# Linux bootable partition config ends
# Other bootable partition config begins:
# title Windows (on /dev/hda4)
# map (hd0,0) (hd0,3)
# map (hd0,3) (hd0,0)
# rootnoverify (hd0,3)
# makeactive
# chainloader +1
# Other bootable partition config ends
title Install GRUB to floppy disk (on /dev/fd0)
pause Insert a formatted floppy disk and press enter.
line: 1 col: 0 sel: 0 INS MOD mode: Unix (LF) encoding: UTF-8 filetype: None...
```

"Comment out", i.e. put a number sign (#) before each of the following lines:



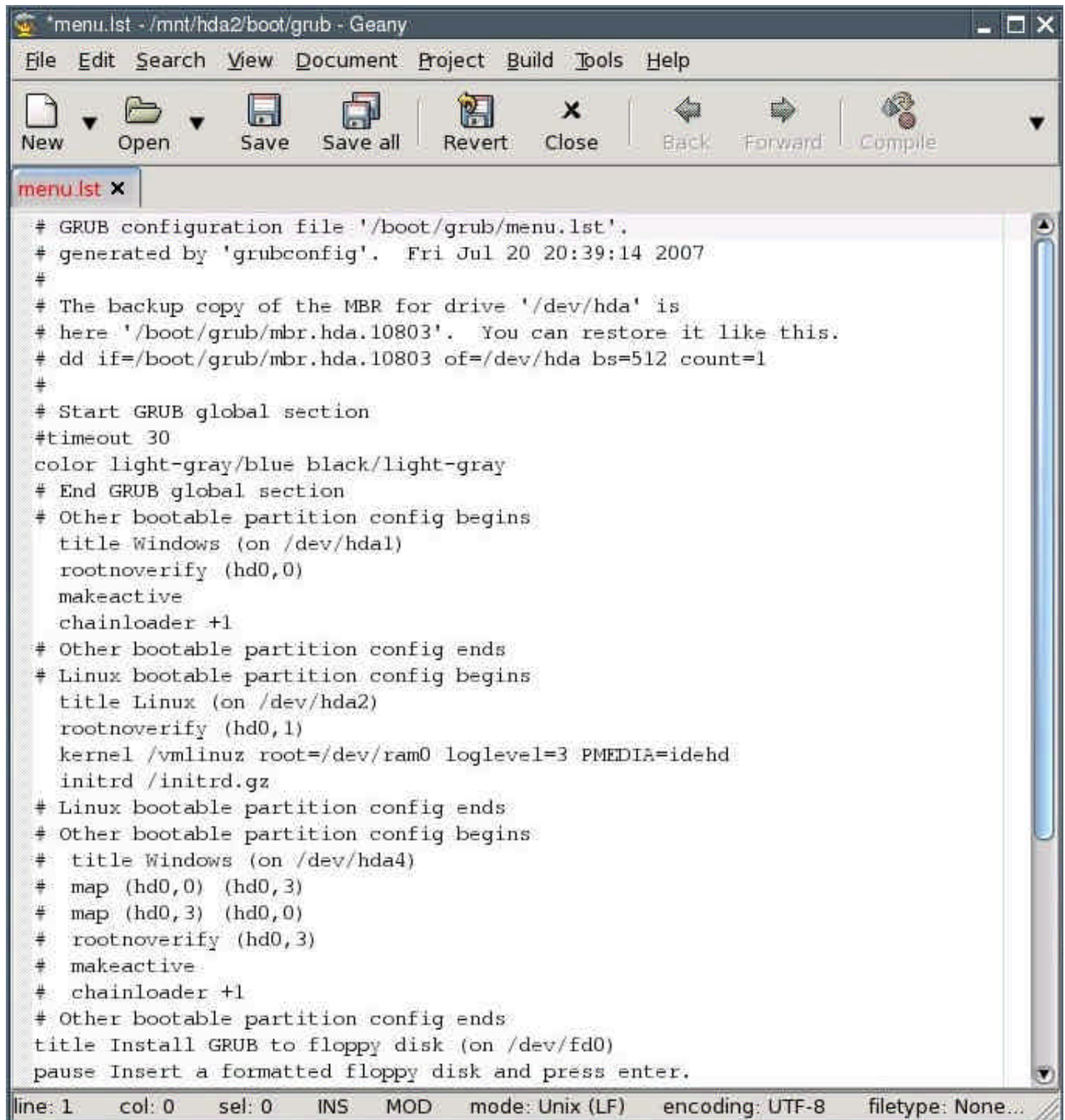
```
menu.lst - /mnt/hda2/boot/grub - Geany
File Edit Search View Document Project Build Tools Help
New Open Save Save all Revert Close Back Forward Compile
menu.lst x
# GRUB configuration file '/boot/grub/menu.lst'.
# generated by 'grubconfig'.  Fri Jul 20 20:39:14 2007
#
# The backup copy of the MBR for drive '/dev/hda' is
# here '/boot/grub/mbr.hda.10803'.  You can restore it like this.
# dd if=/boot/grub/mbr.hda.10803 of=/dev/hda bs=512 count=1
#
# Start GRUB global section
#timeout 30
color light-gray/blue black/light-gray
# End GRUB global section
# Other bootable partition config begins
title Windows (on /dev/hda1)
rootnoverify (hd0,0)
makeactive
chainloader +1
# Other bootable partition config ends
# Linux bootable partition config begins
title Linux (on /dev/hda2)
root (hd0,1)
kernel /boot/vmlinuz root=/dev/hda2 ro vga=normal
# Linux bootable partition config ends
# Other bootable partition config begins
title Windows (on /dev/hda4)
map (hd0,0) (hd0,3)
map (hd0,3) (hd0,0)
rootnoverify (hd0,3)
makeactive
chainloader +1
# Other bootable partition config ends
title Install GRUB to floppy disk (on /dev/fd0)
pause Insert a formatted floppy disk and press enter.
root (hd0,1)
File /mnt/hda2/boot/grub/menu.lst opened(1).
```

It should now look like this:



```
*menu.lst - /mnt/hda2/boot/grub - Geany
File Edit Search View Document Project Build Tools Help
New Open Save Save all Revert Close Back Forward Compile
menu.lst x
# GRUB configuration file '/boot/grub/menu.lst'.
# generated by 'grubconfig'.  Fri Jul 20 20:39:14 2007
#
# The backup copy of the MBR for drive '/dev/hda' is
# here '/boot/grub/mbr.hda.10803'.  You can restore it like this.
# dd if=/boot/grub/mbr.hda.10803 of=/dev/hda bs=512 count=1
#
# Start GRUB global section
#timeout 30
color light-gray/blue black/light-gray
# End GRUB global section
# Other bootable partition config begins
title Windows (on /dev/hda1)
rootnoverify (hd0,0)
makeactive
chainloader +1
# Other bootable partition config ends
# Linux bootable partition config begins
title Linux (on /dev/hda2)
rootnoverify (hd0,1)
kernel /vmlinuz root=/dev/ram0 loglevel=3 PMEDIA=idehd
initrd /initrd.gz
# Linux bootable partition config ends
# Other bootable partition config begins:
# title Windows (on /dev/hda4)
# map (hd0,0) (hd0,3)
# map (hd0,3) (hd0,0)
# rootnoverify (hd0,3)
# makeactive
# chainloader +1
# Other bootable partition config ends
title Install GRUB to floppy disk (on /dev/fd0)
pause Insert a formatted floppy disk and press enter.
line: 1 col: 0 sel: 0 INS MOD mode: Unix (LF) encoding: UTF-8 filetype: None...
```

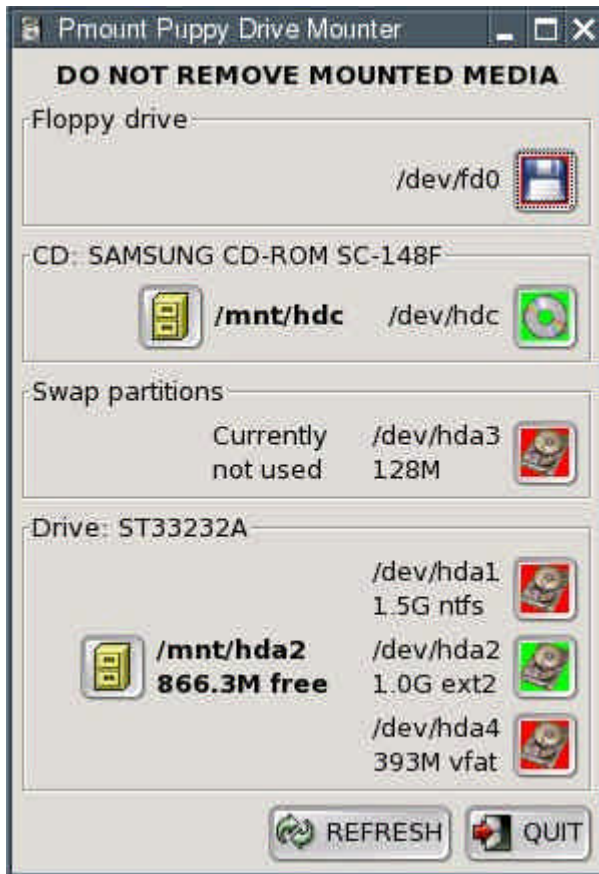
All necessary changes have been made. The file should now look like this:



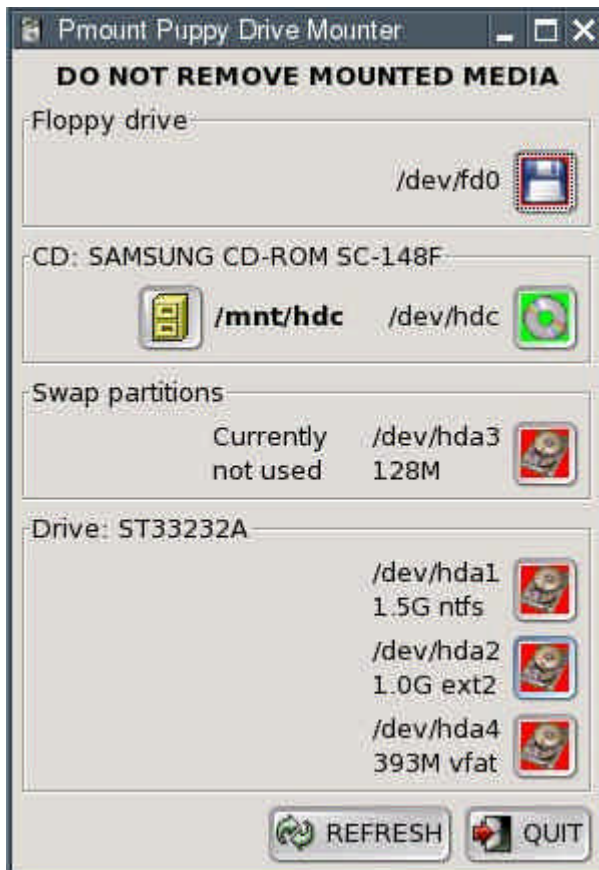
```
# GRUB configuration file '/boot/grub/menu.lst'.
# generated by 'grubconfig'.  Fri Jul 20 20:39:14 2007
#
# The backup copy of the MBR for drive '/dev/hda' is
# here '/boot/grub/mbr.hda.10803'.  You can restore it like this.
# dd if=/boot/grub/mbr.hda.10803 of=/dev/hda bs=512 count=1
#
# Start GRUB global section
#timeout 30
color light-gray/blue black/light-gray
# End GRUB global section
# Other bootable partition config begins
title Windows (on /dev/hda1)
rootnoverify (hd0,0)
makeactive
chainloader +1
# Other bootable partition config ends
# Linux bootable partition config begins
title Linux (on /dev/hda2)
rootnoverify (hd0,1)
kernel /vmlinuz root=/dev/ram0 loglevel=3 PMEDIA=idehd
initrd /initrd.gz
# Linux bootable partition config ends
# Other bootable partition config begins
# title Windows (on /dev/hda4)
# map (hd0,0) (hd0,3)
# map (hd0,3) (hd0,0)
# rootnoverify (hd0,3)
# makeactive
# chainloader +1
# Other bootable partition config ends
title Install GRUB to floppy disk (on /dev/fd0)
pause Insert a formatted floppy disk and press enter.
```

line: 1 col: 0 sel: 0 INS MOD mode: Unix (LF) encoding: UTF-8 filetype: None...

- Save the file by selecting "File | Save" from the program's menu. Exit the text editor.
- Close the ROX file manager.
- Click on the green hard drive symbol next to /dev/hda2. It should then change colour from green to red.



- Click on the green CD-ROM symbol next to /dev/hdc. Remove the Puppy CD.



- Exit Puppy and reboot the computer: "Menu | Shutdown | Reboot computer".

- When you reboot the computer, you will be asked whether you want to save the "session" (i.e., all the configuration changes you made). Hit Return to select the entry "SAVE TO FILE", which is already highlighted.
- Confirm the next dialogue (Warning) by hitting Return.
- In the next dialogue, select the "hda2" partition with the cursor keys and press Return.
- You will be asked whether you want a normal (unencrypted) or an encrypted save file. Select "NORMAL" with the cursor keys and press Return.
- The next dialogue lets you choose a size for your save file. A file size of 512 megabytes is usually sufficient. You can increase (but not decrease) this size anytime from within Puppy. Pick the desired file size with the cursor keys and press Return.
- Confirm the next dialogue by pressing Return. Creating the save file can take a few minutes; please be patient.
- Your computer will now shut down completely and then start up again. You will then see the boot loader come up. Select "Puppy Linux (on /dev/hda2)" with the cursor keys and press Return. Puppy boots up.

4.2.2 Manual Frugal Installation / Puppy Update

To be able to use this option, a boot loader has to be installed on your computer. If there is no boot loader installed on your computer, I recommend doing so using the Puppy Universal Installer durchzufÃ¼hren (see chapter 4.2.1).

? Boot Puppy fom CD with the "puppy pfix=ram" boot option. Copy the files

- PUP_217.SFS
- ZDRV_217.SFS
- INITRD.GZ
- VMLINUZ

onto a partition with a Linux file system (ext2/ext3) oder a FAT32 file system. If you are updating Puppy, overwrite the existing files. Reconfigure the GRUB boot loader by editing the menu.lst file. You will usually find this file on a Linux partition in the /boot/grub folder.

? Append the following two lines to the file menu.lst:

```
title = Puppy
rootnoverify (hd0,1)
kernel /vmlinuz root=/dev/ram0 loglevel=3 pmedia=idehd
initrd /initrd.gz
```

Notice: (hd0,1) signifies the hard disk and partition on which GRUB is stored. Depending on your boot medium, you will need to set the pmedia parameter to one of usbflash usbhd usbcd ideflash idehd idecd idezip satahd scsihd scsicc.

? Save the file menu.lst

? Close the text editor. Remove the Puppy CD from the drive and exit Puppy without saving your session. Reboot the PC. Puppy should now boot without the CD in the drive.

4.2.3 Full Installation

A Full Installation installs Puppy onto the hard drive like any other "normal" Linux. This kind of installation is a good idea if you have less than 256 MB of memory.

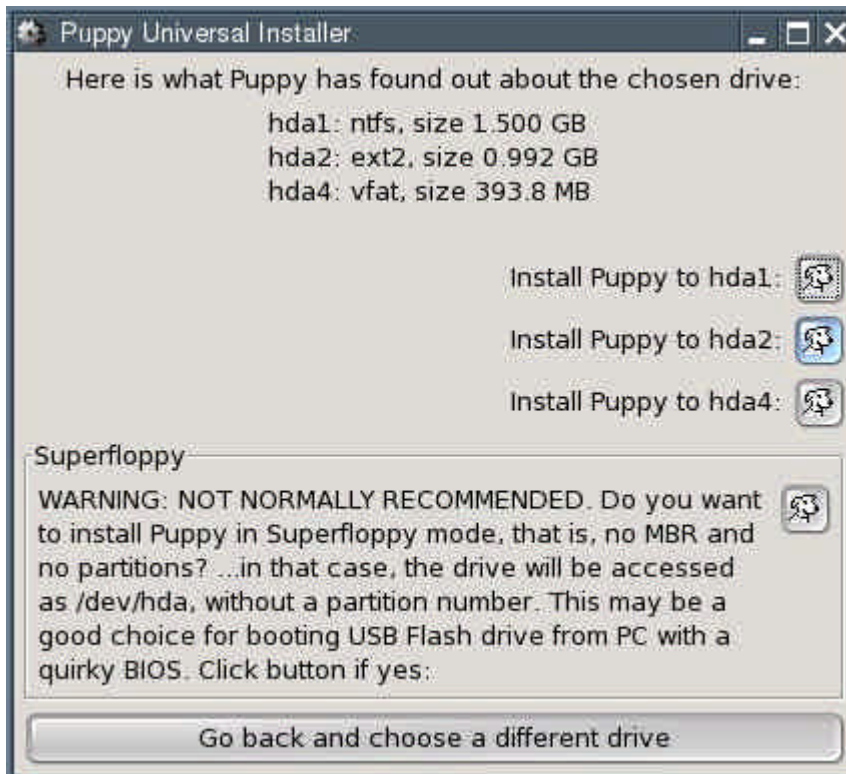
- Start "Menu | Setup | Puppy universal installer". Select the medium that you want to install Puppy to. I chose the internal hard drive for this example.



- If you have more than one hard drive, choose one.



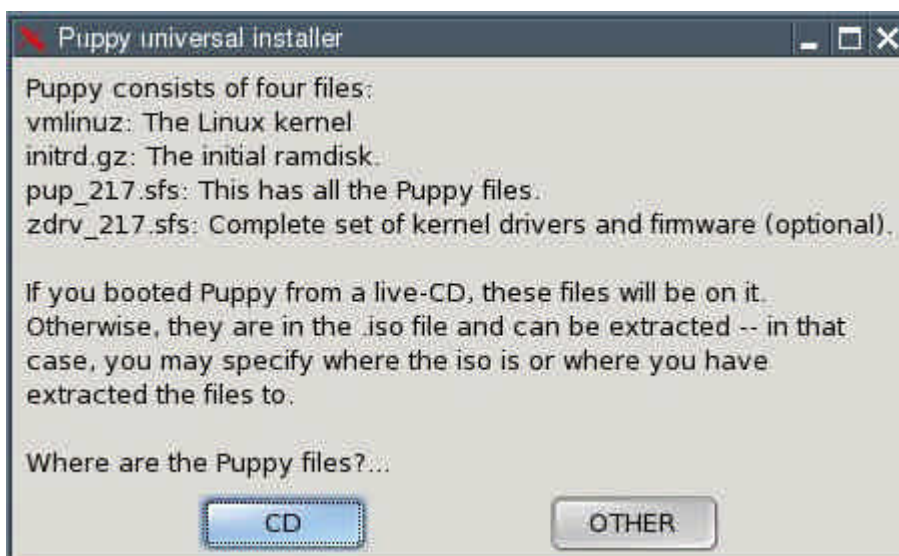
- Click the button next to the partition that you want to install Puppy to.



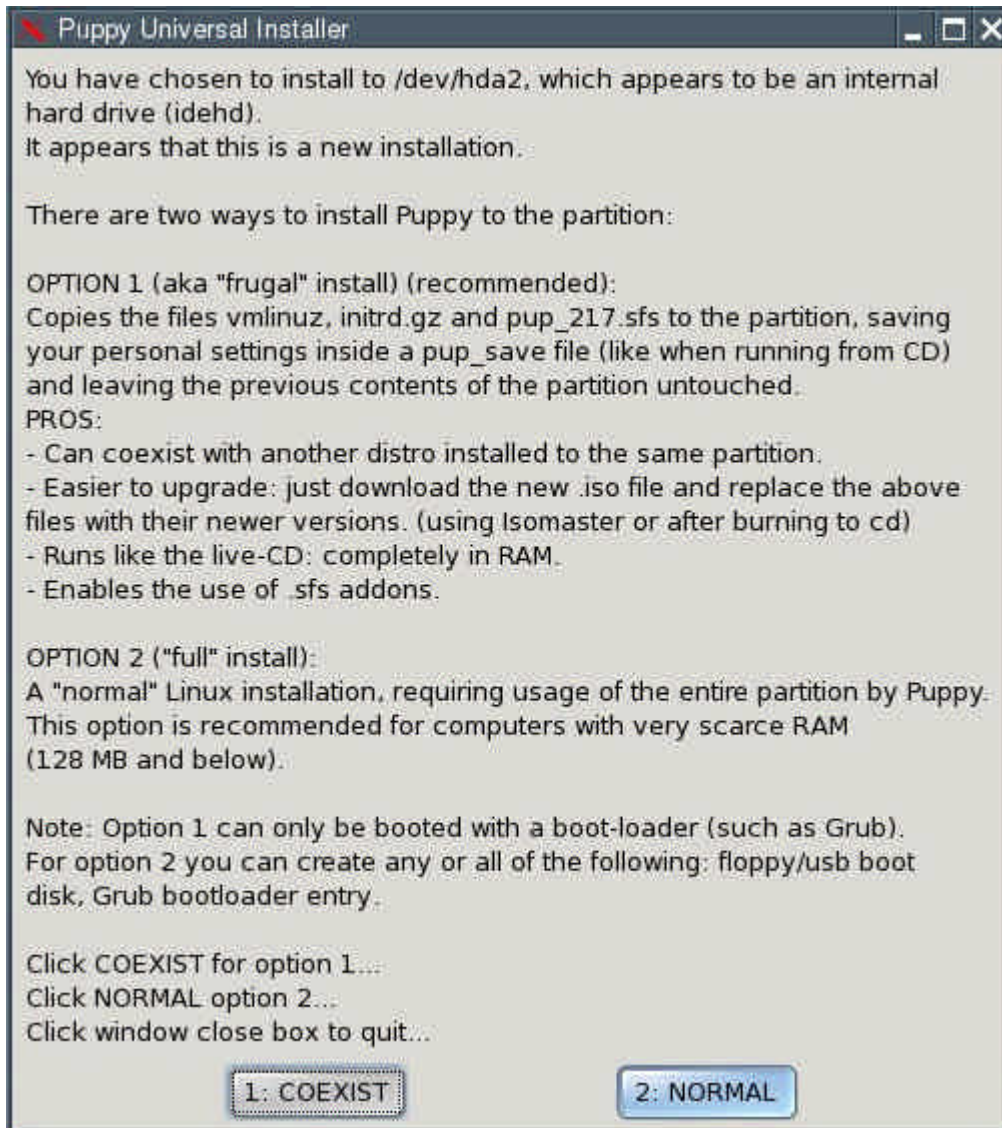
- Confirm the next dialogue by clicking "OK".



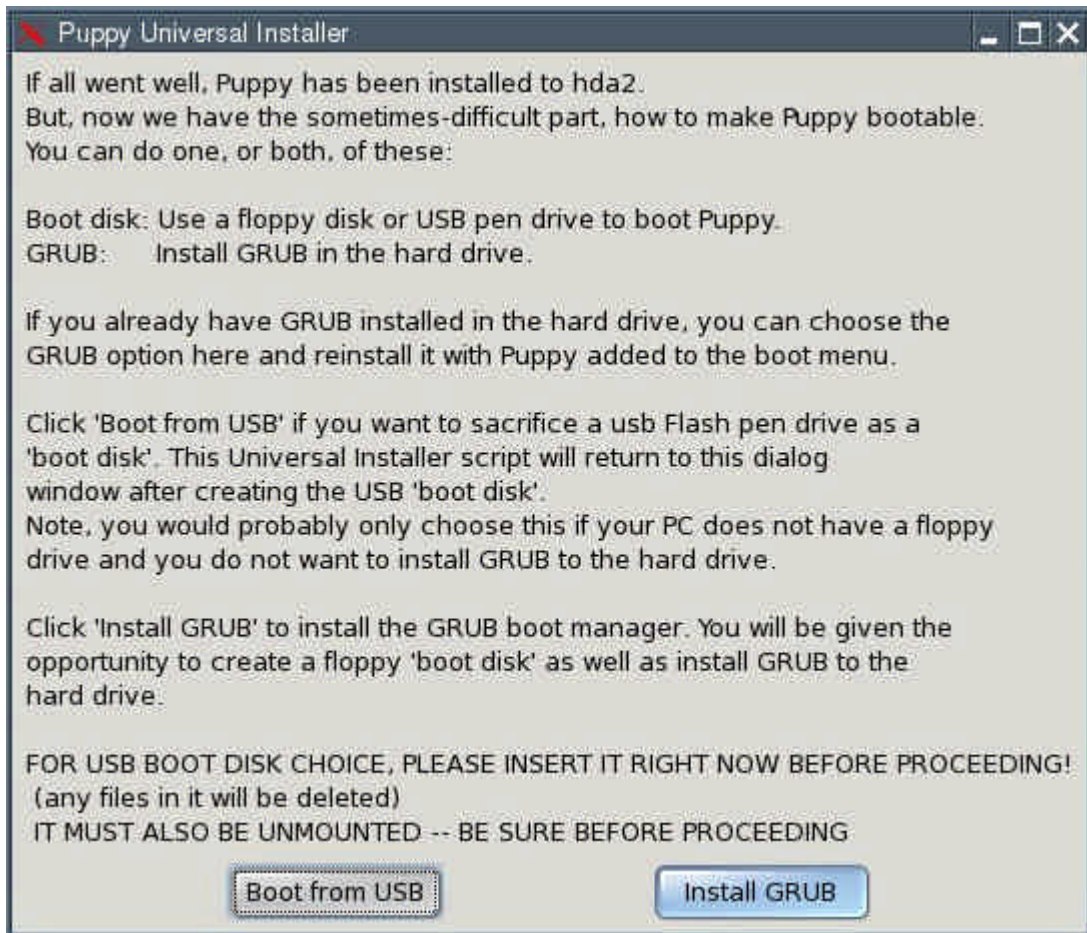
- Specify which medium Pupy Linux currently lives on. This will probably be a CD. Click the "CD" button.



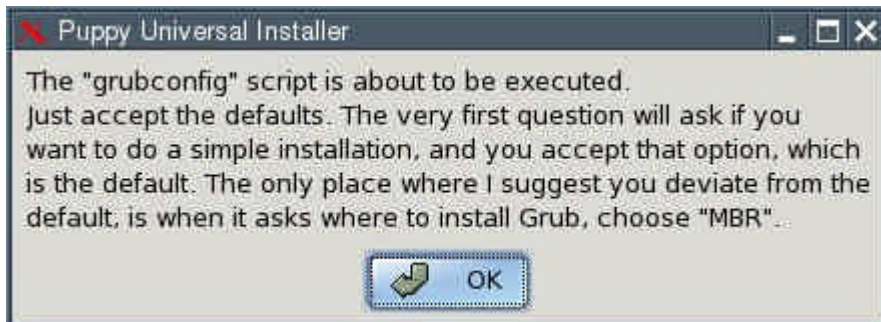
- You now have to decide whether you want a "Frugal" (see chapter 4.2.1) or a "Full" installation. Since this chapter describes a Full installation, click the button labelled "NORMAL".



- The files will be copied from the CD to the hard drive.
- Since you now have two operating systems on your computer (Windows and Puppy Linux), you need a boot loader. The boot loader is the first program executed after switching the computer on. It enables you to specify which operating system should be started up. If Windows was the only operating system on your computer up to now, you do not have a boot loader. The Puppy Installer can install GRUB as a boot loader for you. To do this, click on "INSTALL GRUB".



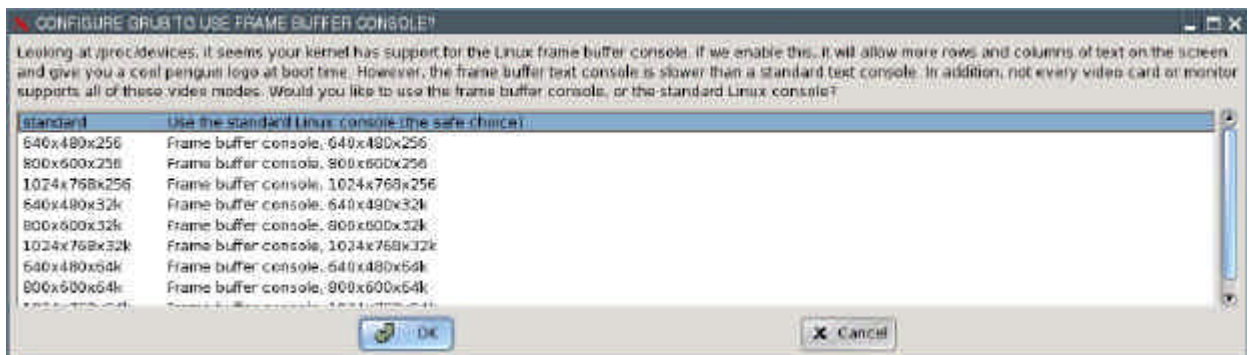
- Confirm the next dialogue by clicking "OK".



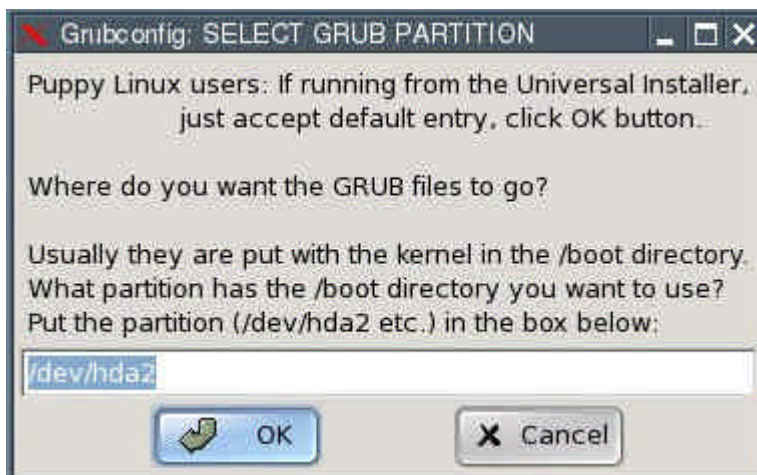
- Select "simple installation" and click "OK".



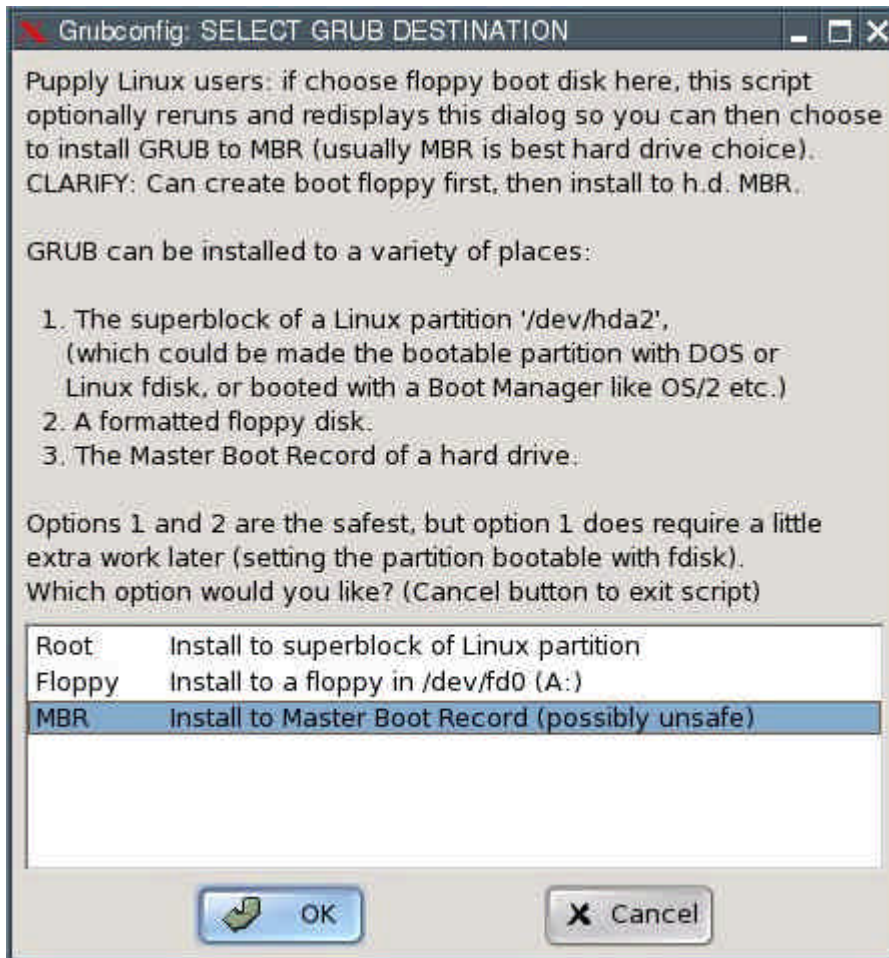
- In the next dialogue box, select "standard" and click "OK".



- Now you have to specify where the GRUB boot loader should store its files. These can only be written to a Linux file system partition. Thus, please type "/dev/hda2" - that is, the same partition to which Puppy has just been installed.



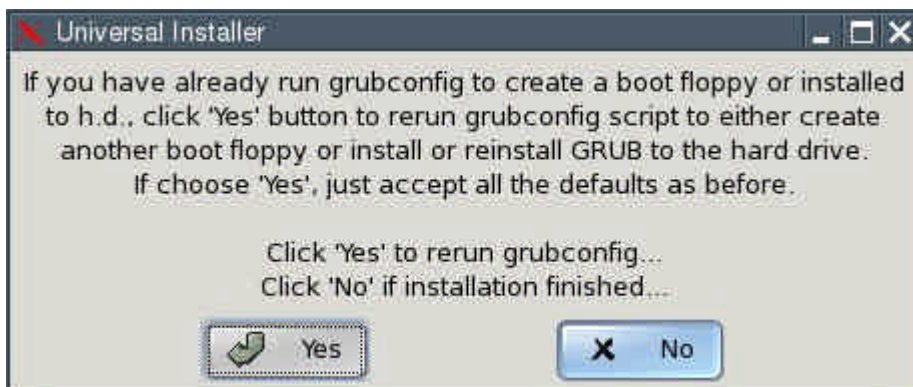
- Now you have to specify where the GRUB boot loader itself should be installed to. Select the Master Boot Record "MBR" and click "OK".



- Confirm the next dialogue by clicking "OK".



- In the next dialogue box, click the "No" button.

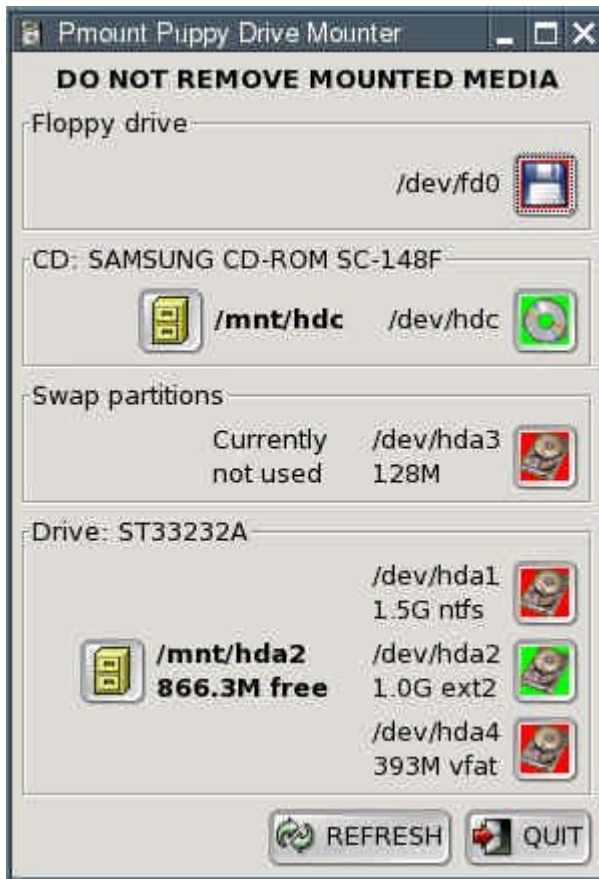


- The installation is complete. What remains to be done is to configure the GRUB boot loader so that Puppy Linux can be booted. This is how to do it:
- Open the file "menu.lst". You will find this file in the /boot/grub directory of the partition you installed the GRUB files to (/dev/hda2 in our example). For Linux newbies, I include detailed instructions on how to find and open this file. More advanced users can skip ahead to where menu.lst gets edited.

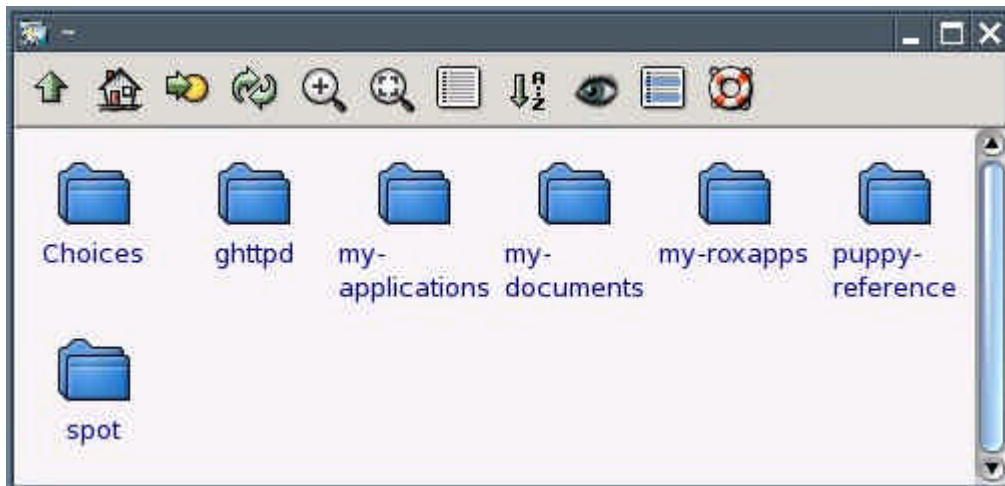
- Start "Menu | Filesystem | Pmount mount/unmount drives" and click on the red hard disk symbol next to "/dev/hda2".



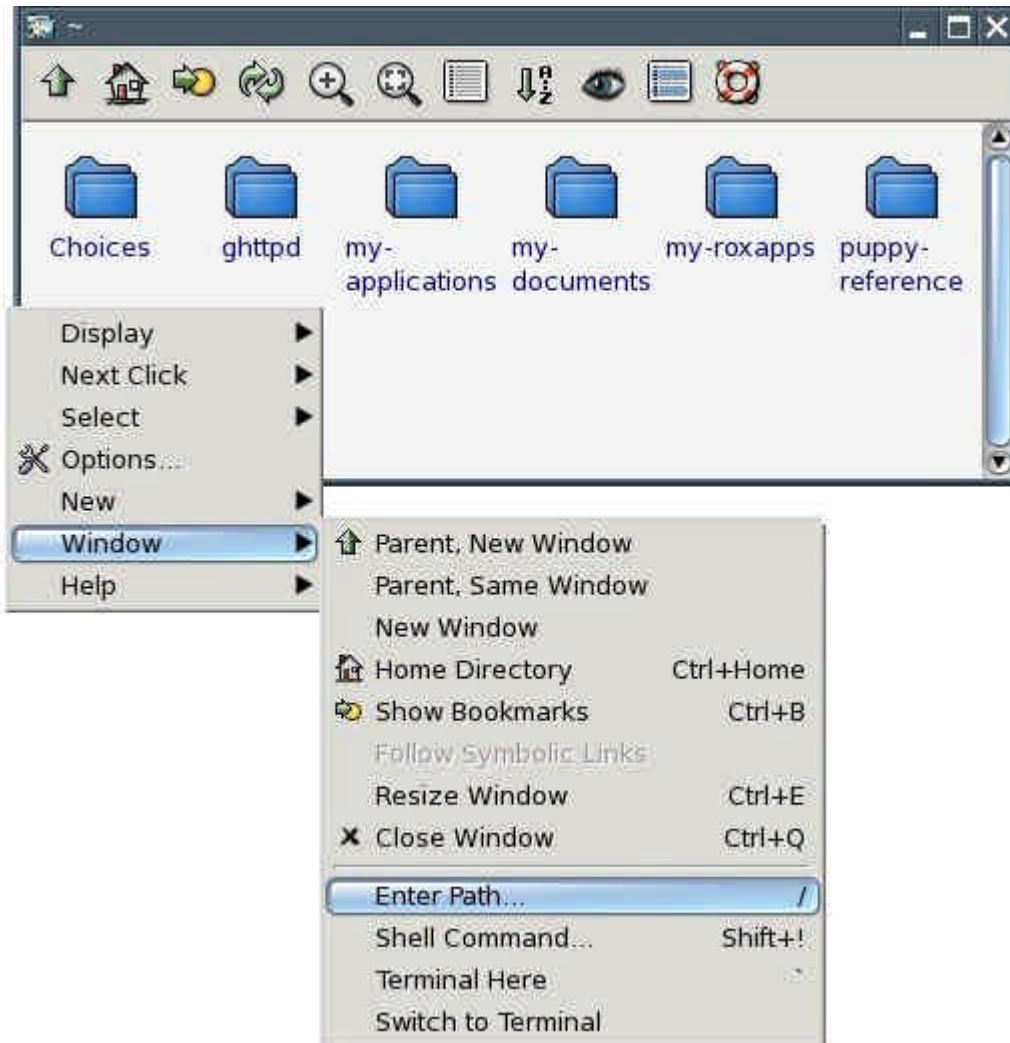
- The symbol changes colour from red to green.



- Start "Menu | Filesystem | ROX-File file filemanager".



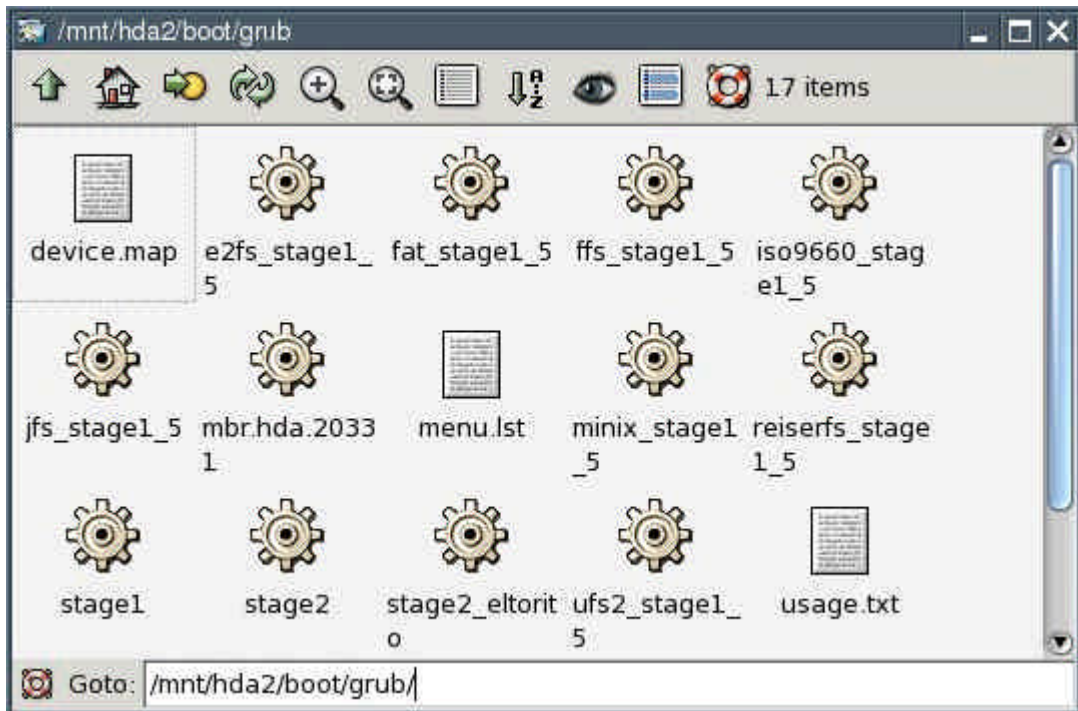
- Click with the right mouse button and choose "Window | Enter Path" from the context menu.



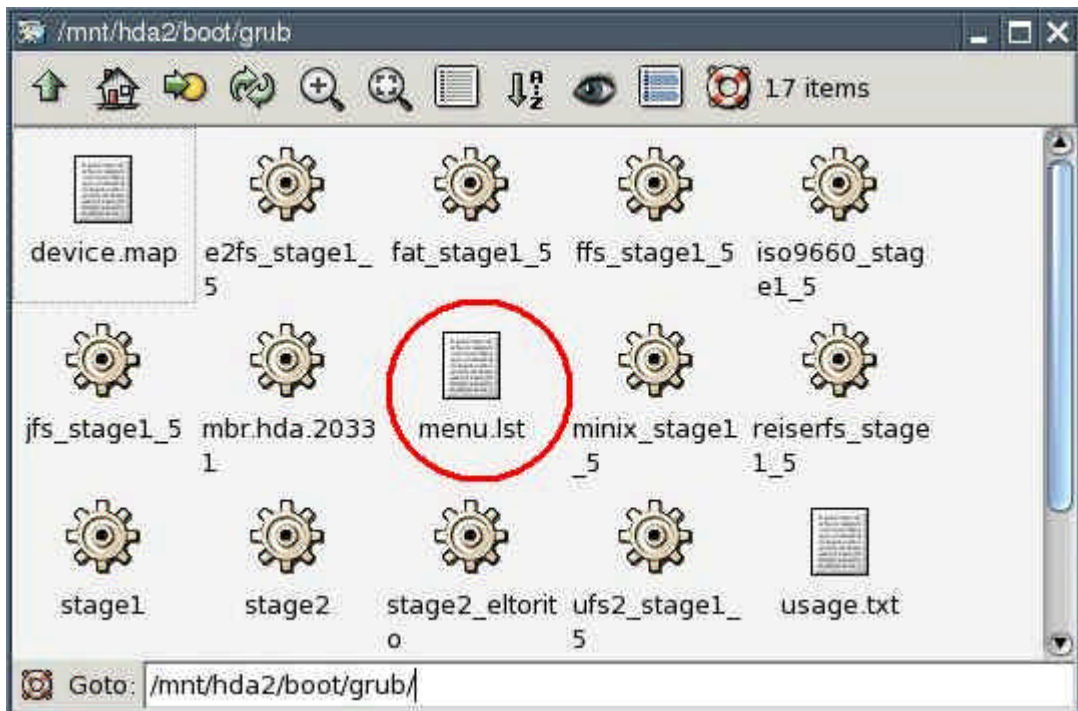
Type this into the box labelled "Goto" (do not omit the slash at the end):
`/mnt/hda2/boot/grub/`



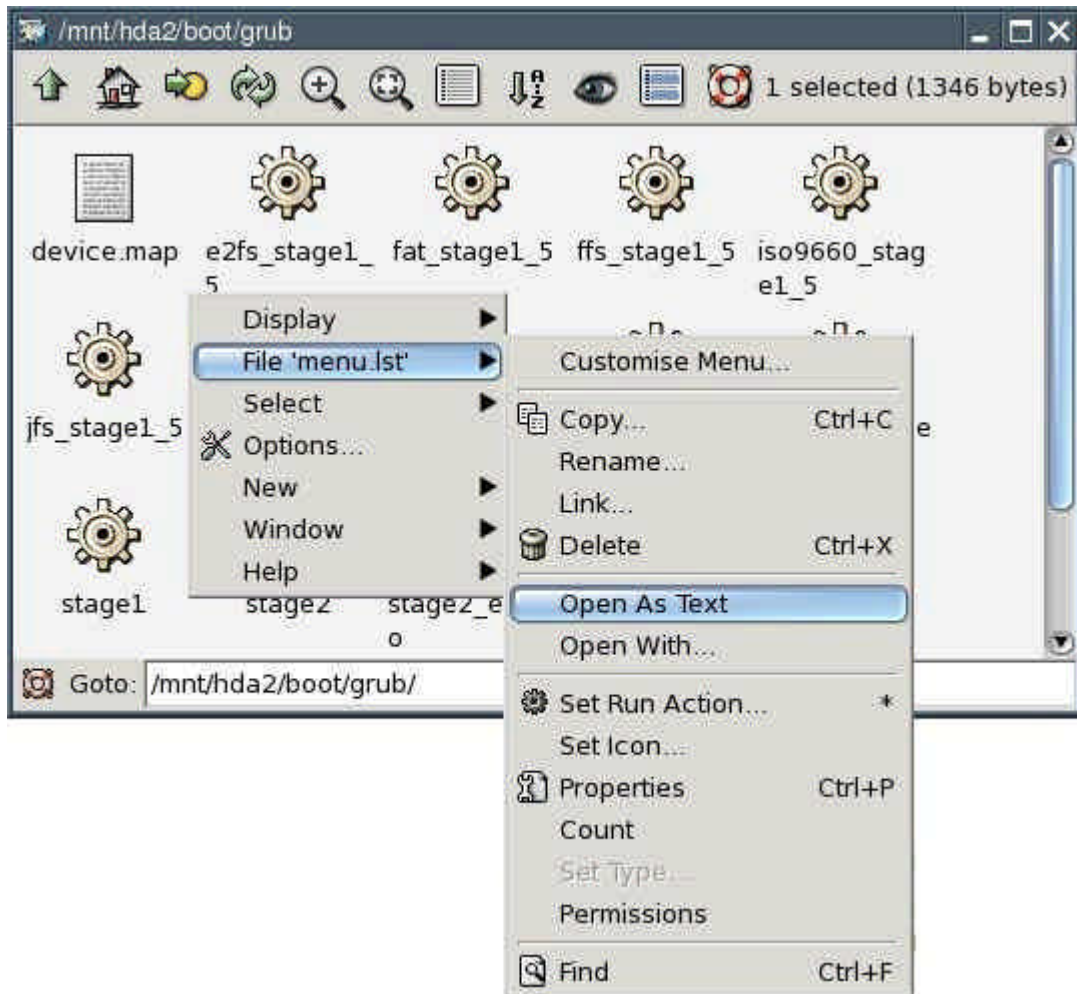
You are now inside the `/mnt/hda2/boot/grub/` folder.



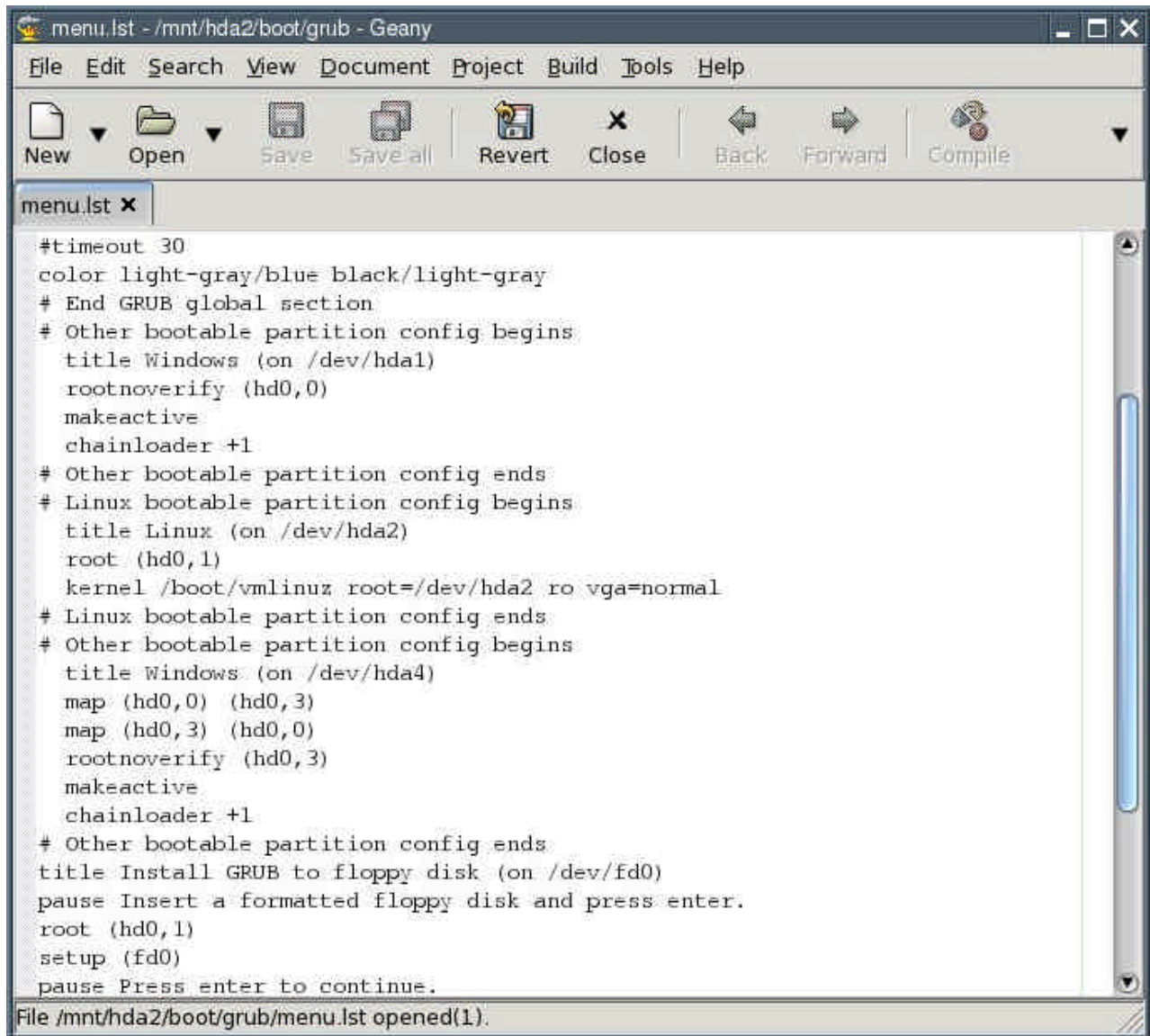
- Use the right mouse button to click on the file called "menu.lst".



>From the context menu that pops up, select "File menu.lst | Open As Text".



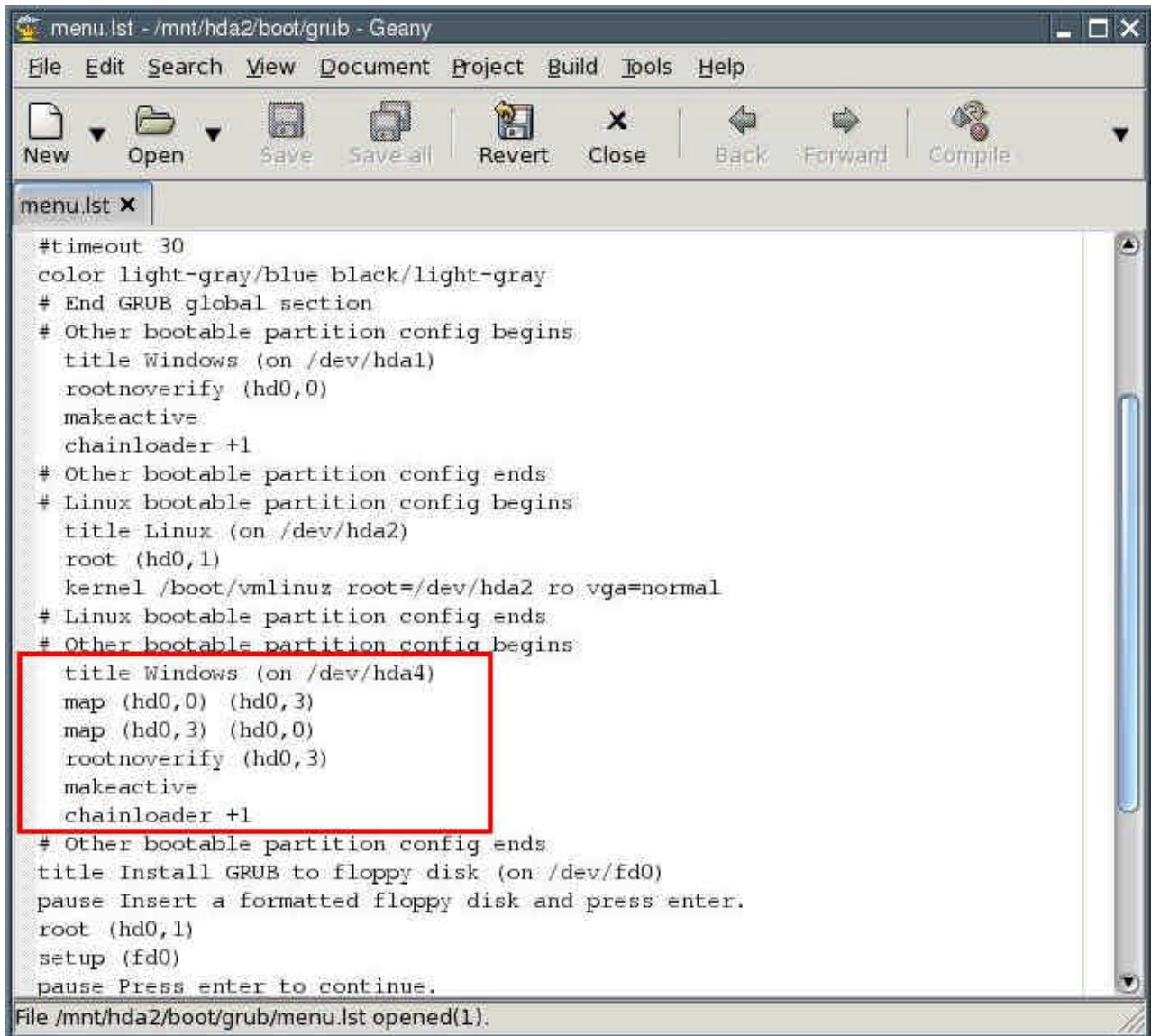
- You can now see the contents of the menu.lst file.



```
#timeout 30
color light-gray/blue black/light-gray
# End GRUB global section
# Other bootable partition config begins
title Windows (on /dev/hda1)
rootnoverify (hd0,0)
makeactive
chainloader +1
# Other bootable partition config ends
# Linux bootable partition config begins
title Linux (on /dev/hda2)
root (hd0,1)
kernel /boot/vmlinuz root=/dev/hda2 ro vga=normal
# Linux bootable partition config ends
# Other bootable partition config begins
title Windows (on /dev/hda4)
map (hd0,0) (hd0,3)
map (hd0,3) (hd0,0)
rootnoverify (hd0,3)
makeactive
chainloader +1
# Other bootable partition config ends
title Install GRUB to floppy disk (on /dev/fd0)
pause Insert a formatted floppy disk and press enter.
root (hd0,1)
setup (fd0)
pause Press enter to continue.
```

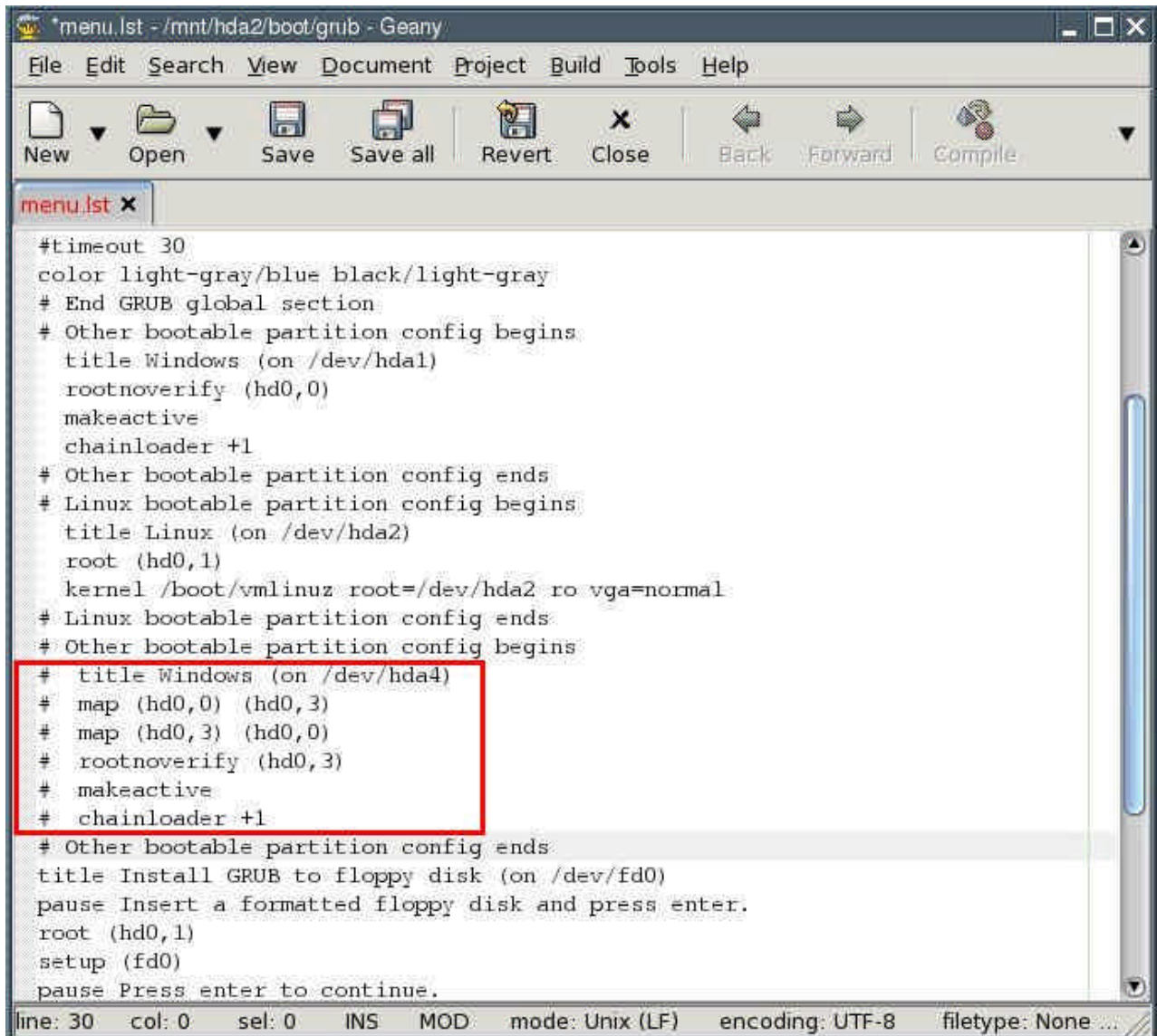
File /mnt/hda2/boot/grub/menu.lst opened(1).

"Comment out", i.e. put a number sign (#) before each of the following lines:



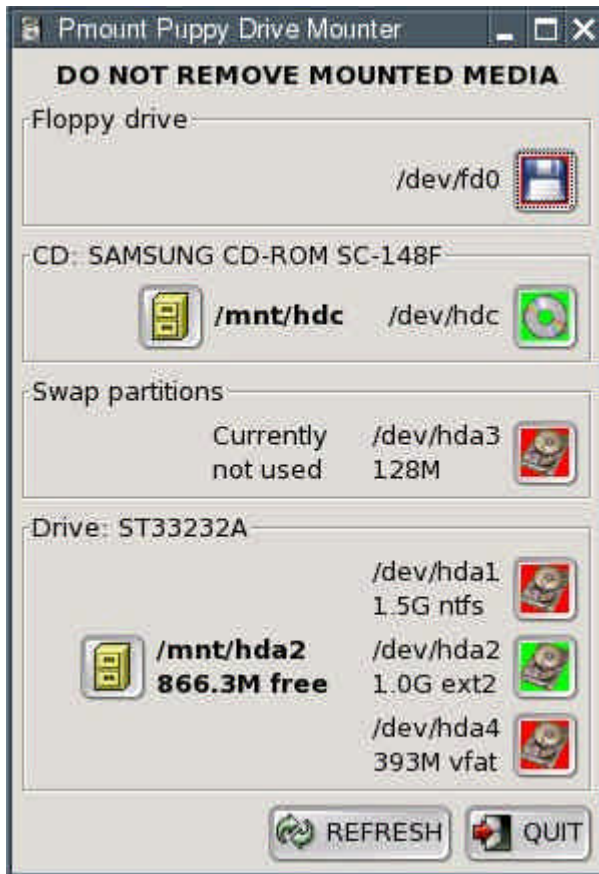
```
menu.lst - /mnt/hda2/boot/grub - Geany
File Edit Search View Document Project Build Tools Help
New Open Save Save all Revert Close Back Forward Compile
menu.lst x
#timeout 30
color light-gray/blue black/light-gray
# End GRUB global section
# Other bootable partition config begins
title Windows (on /dev/hda1)
rootnoverify (hd0,0)
makeactive
chainloader +1
# Other bootable partition config ends
# Linux bootable partition config begins
title Linux (on /dev/hda2)
root (hd0,1)
kernel /boot/vmlinuz root=/dev/hda2 ro vga=normal
# Linux bootable partition config ends
# Other bootable partition config begins
title Windows (on /dev/hda4)
map (hd0,0) (hd0,3)
map (hd0,3) (hd0,0)
rootnoverify (hd0,3)
makeactive
chainloader +1
# Other bootable partition config ends
title Install GRUB to floppy disk (on /dev/fd0)
pause Insert a formatted floppy disk and press enter.
root (hd0,1)
setup (fd0)
pause Press enter to continue.
File /mnt/hda2/boot/grub/menu.lst opened(1).
```

All necessary changes have been made. The file should now look like this:

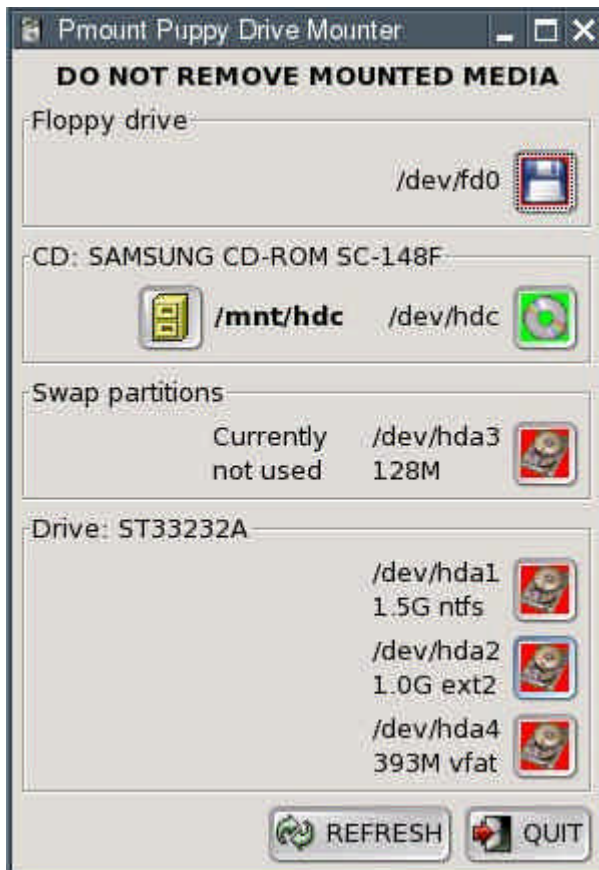


```
*menu.lst - /mnt/hda2/boot/grub - Geany
File Edit Search View Document Project Build Tools Help
New Open Save Save all Revert Close Back Forward Compile
menu.lst x
#timeout 30
color light-gray/blue black/light-gray
# End GRUB global section
# Other bootable partition config begins
title Windows (on /dev/hda1)
rootnoverify (hd0,0)
makeactive
chainloader +1
# Other bootable partition config ends
# Linux bootable partition config begins
title Linux (on /dev/hda2)
root (hd0,1)
kernel /boot/vmlinuz root=/dev/hda2 ro vga=normal
# Linux bootable partition config ends
# Other bootable partition config begins
# title Windows (on /dev/hda4)
# map (hd0,0) (hd0,3)
# map (hd0,3) (hd0,0)
# rootnoverify (hd0,3)
# makeactive
# chainloader +1
# Other bootable partition config ends
title Install GRUB to floppy disk (on /dev/fd0)
pause Insert a formatted floppy disk and press enter.
root (hd0,1)
setup (fd0)
pause Press enter to continue.
line: 30 col: 0 sel: 0 INS MOD mode: Unix (LF) encoding: UTF-8 filetype: None ...
```

- Save the file by selecting "File | Save" from the program's menu. Exit the text editor.
- Close the ROX file manager.
- Click on the green hard drive symbol next to /dev/hda2. It should then change colour from green to red.



- Click on the green CD-ROM symbol next to /dev/hdc. Remove the Puppy CD.



- Exit Puppy and reboot the computer: "Menu | Shutdown | Reboot computer".

- When you reboot the computer, you will be asked whether you want to save the "session" (i.e., all the configuration changes you made). Select "DO NOT SAVE" with the cursor keys and hit Return.
- Your computer will now shut down completely and then start up again. You will then see the boot loader come up. Select "Puppy Linux (on /dev/hda2)" with the cursor keys and press Return. Puppy boots up. At the first bootup, you will once again have to specify your country and your screen resolution. This configuration is saved so that you do not have to repeat this process at the next bootup.

5. How to setup an Internet connection

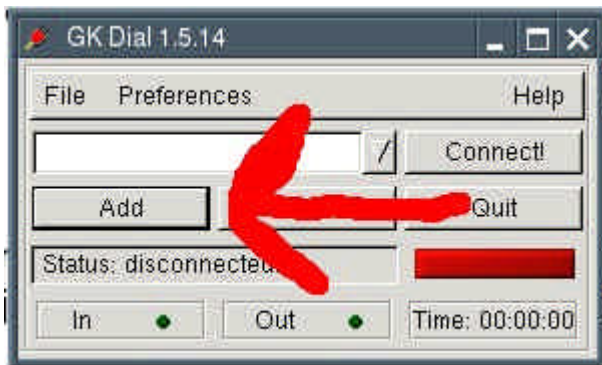
5.1 Modem

The following instruction is from the Puppy-forum and it is not tested by me.

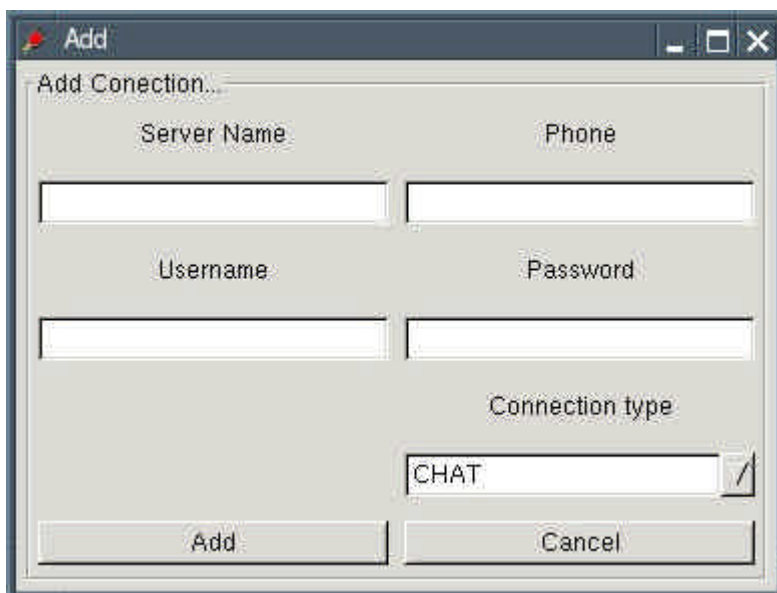
Start off clicking on the connect icon on the desktop. If you have an external serial modem it should have been auto-detected by Puppy. In that case just start "Menu | Network | GKdial modem dialup".

If not you will have to use "Menu | Setup | Modem Wizard". If the modem wizard does not work you most likely have a winmodem. Puppy does support some types of these modems and there are Linux drivers for others. If your modem does not work consider picking up an external serial modem, they are cheap and work great with linux.

In any case when you get a modem set up all you have to do is open "Menu | Network | GKdial modem dialup" and use the add button.



Next, enter the information from your ISP.

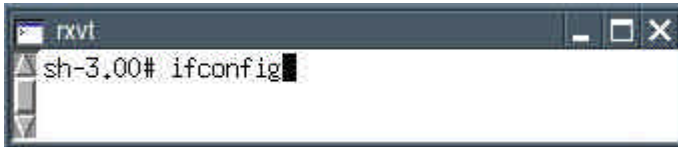


Now click Add and then click Connect on the main screen.

5.2 DSL

First you should check if the ethernet-interface was detected. Start a shell ("Menu | Run | Rxtv terminal emulator") and enter the following command:

- ifconfig



```
rxvt
sh-3.00# ifconfig
```

Can you see "eth0"?




```
rxvt
sh-3.00# ifconfig
eth0  Link encap:Ethernet  HWaddr 00:0B:6A:15:93:AE
      UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
      RX packets:4843 errors:0 dropped:0 overruns:0 frame:0
      TX packets:4185 errors:0 dropped:0 overruns:0 carrier:0
      collisions:0 txqueuelen:1000
      RX bytes:3476343 (3.3 MiB)  TX bytes:637011 (622.0 KiB)
      Interrupt:11 Base address:0xd800

lo    Link encap:Local Loopback
      inet addr:127.0.0.1  Mask:255.0.0.0
      UP LOOPBACK RUNNING  MTU:16436  Metric:1
      RX packets:0 errors:0 dropped:0 overruns:0 frame:0
      TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
      collisions:0 txqueuelen:0
      RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)

sh-3.00#
```

If you can not see "eth0" enter the following command:

- ifconfig eth0 up



```
rxvt
sh-3.00# ifconfig eth0 up
```

To check if the ethernet-interface is available now, enter the following command:

- ifconfig



```
rxvt
sh-3.00# ifconfig
```

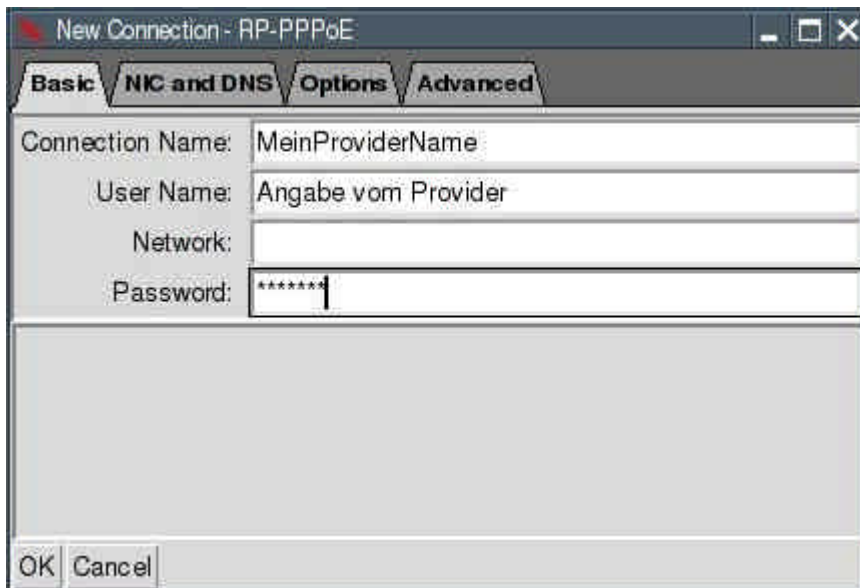
Now you should see "eth0". Close the shell.

Start the program "Menu | Network | Roaring Penguin PPPoE ADSL". The program has four registermaps, which will be described below.

Registermap Basic

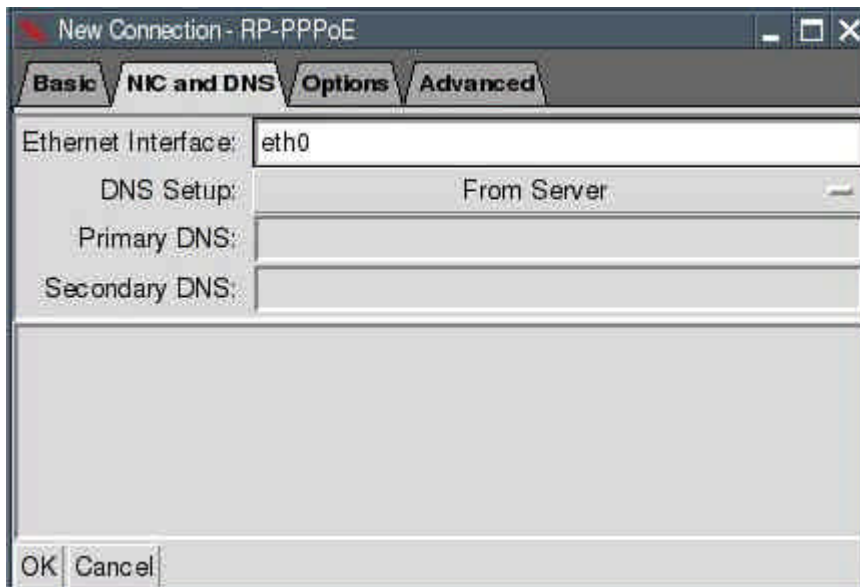
- Connection Name: freely selectable name, e.g. the name of your Internet-provider

- Username: ask your provider
- Network: leave it empty
- Password: ask your provider



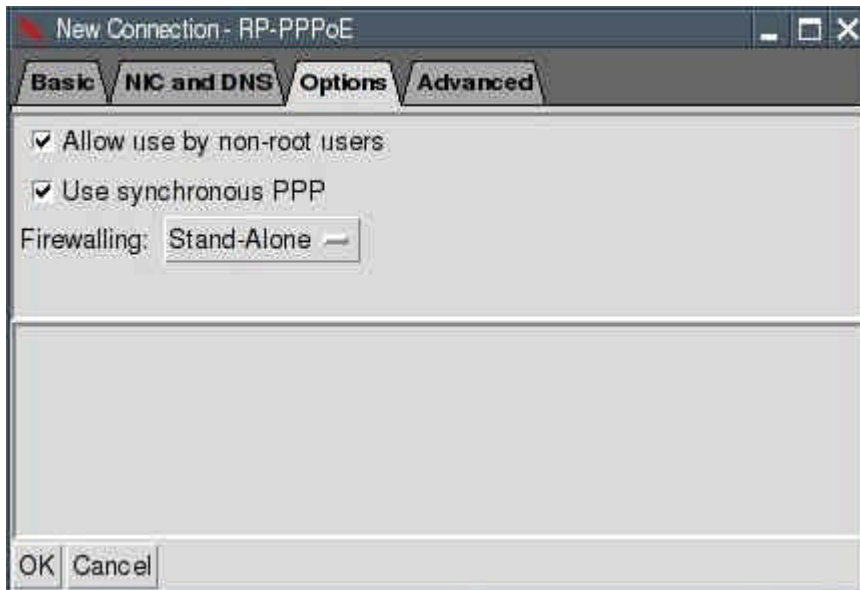
Registermap NIC and DNS

- Ethernet Interface: eth0
- DNS Setup: From Server

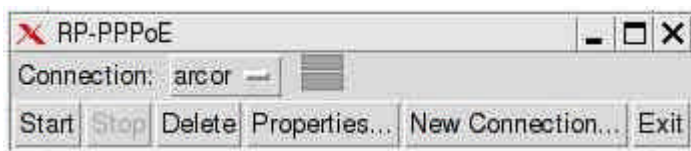


Registermap Options

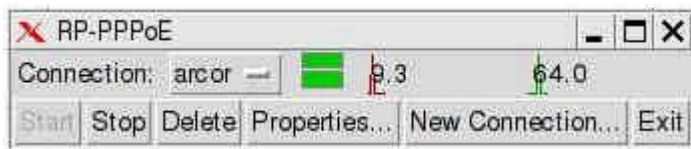
- Allow use by non-root users: mark with a cross
- Use synchronous PPP: mark with a cross
- Firewall: Stand-Alone



Afterwards press the "OK" button. A new window appears "RP-PPPoE". There are two buttons named "Start" and "Stop".



With these two buttons you can connect / disconnect the Internet-connection. If you press the button "Start" two green bars should be visible. Now you are online.



You can now open the Internet browser "Menu | Internet | SeaMonkey Webbrowser". Enter a URL and see if the Internet site is displayed.

5.3 Router

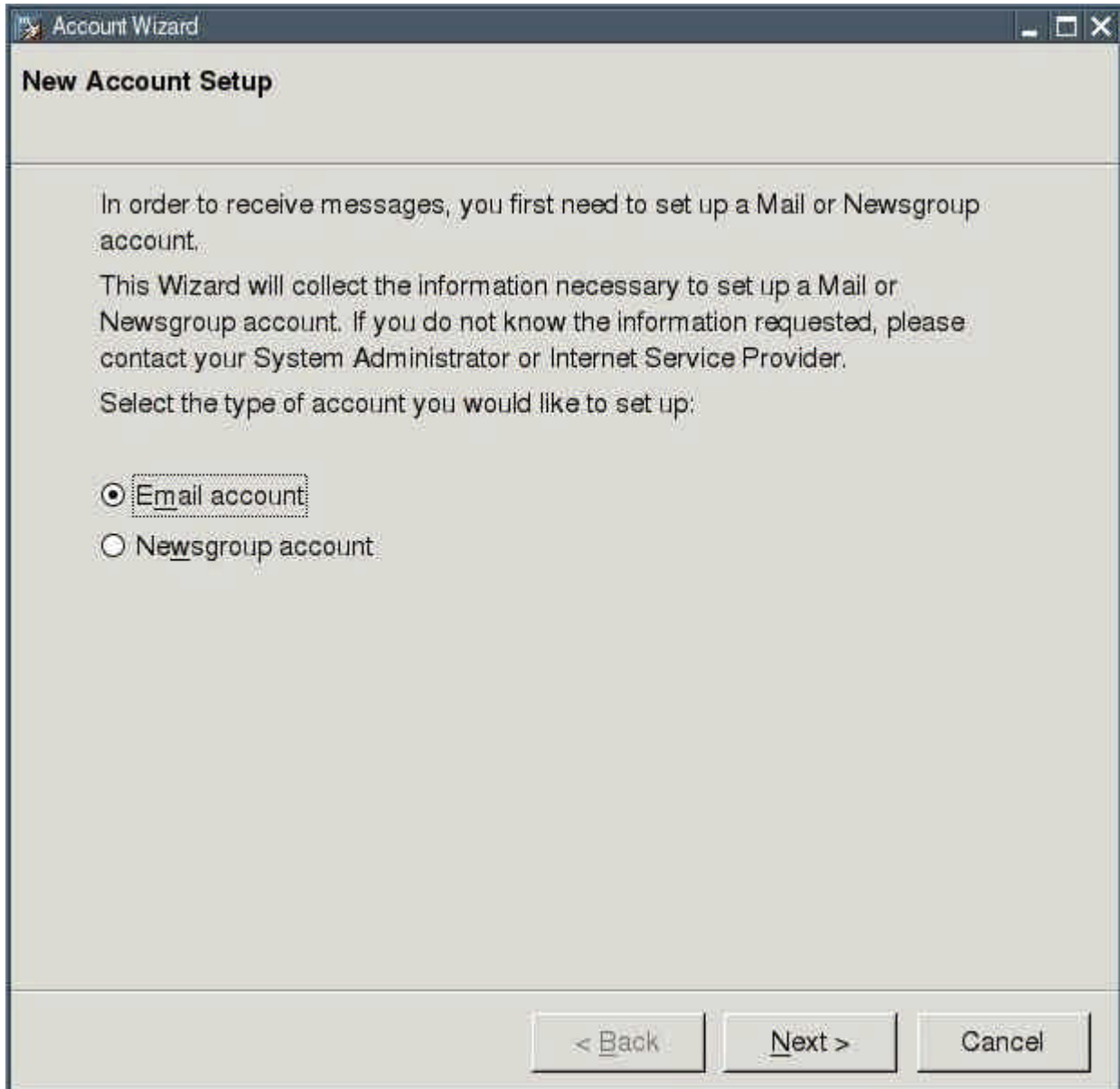
This chapter is still missing. If you want you can help and write this chapter. Please contact mail@puppy-linux.info.

5.4 WLAN

I have no WLAN, so please have a look at: <http://puppylinux.org/wikka/WiFi>

5.5 How to setup your email-program

Start the program "Menu | Internet | SeaMonkey mail and news". The configuration depends on your email-provider. In the following you will find an example for GMX.



Account Wizard

Identity

Each account has an identity, which is the information that identifies you to others when they receive your messages.

Enter the name you would like to appear in the "From" field of your outgoing messages (for example, "John Smith").

Your Name:

Enter your email address. This is the address others will use to send email to you (for example, "user@example.net").

Email Address:

< Back Next > Cancel

Account Wizard

Server Information

Select the type of incoming server you are using.

POP IMAP

Enter the name of your incoming server (for example, "mail.example.net").

Incoming Server:

Uncheck this checkbox to store mail for this account in its own directory. That will make this account appear as a top-level account. Otherwise, it will be part of the Local Folders Global Inbox account.

Use Global Inbox (store mail in Local Folders)

Enter the name of your outgoing server (SMTP) (for example, "smtp.example.net").

Outgoing Server:

< Back Next > Cancel

Account Wizard

User Names

Enter the incoming user name given to you by your email provider (for example, "jsmith").

Incoming User Name:

Enter the outgoing user name given to you by your email provider (this is typically the same as your incoming user name).

Otgoing User Name:

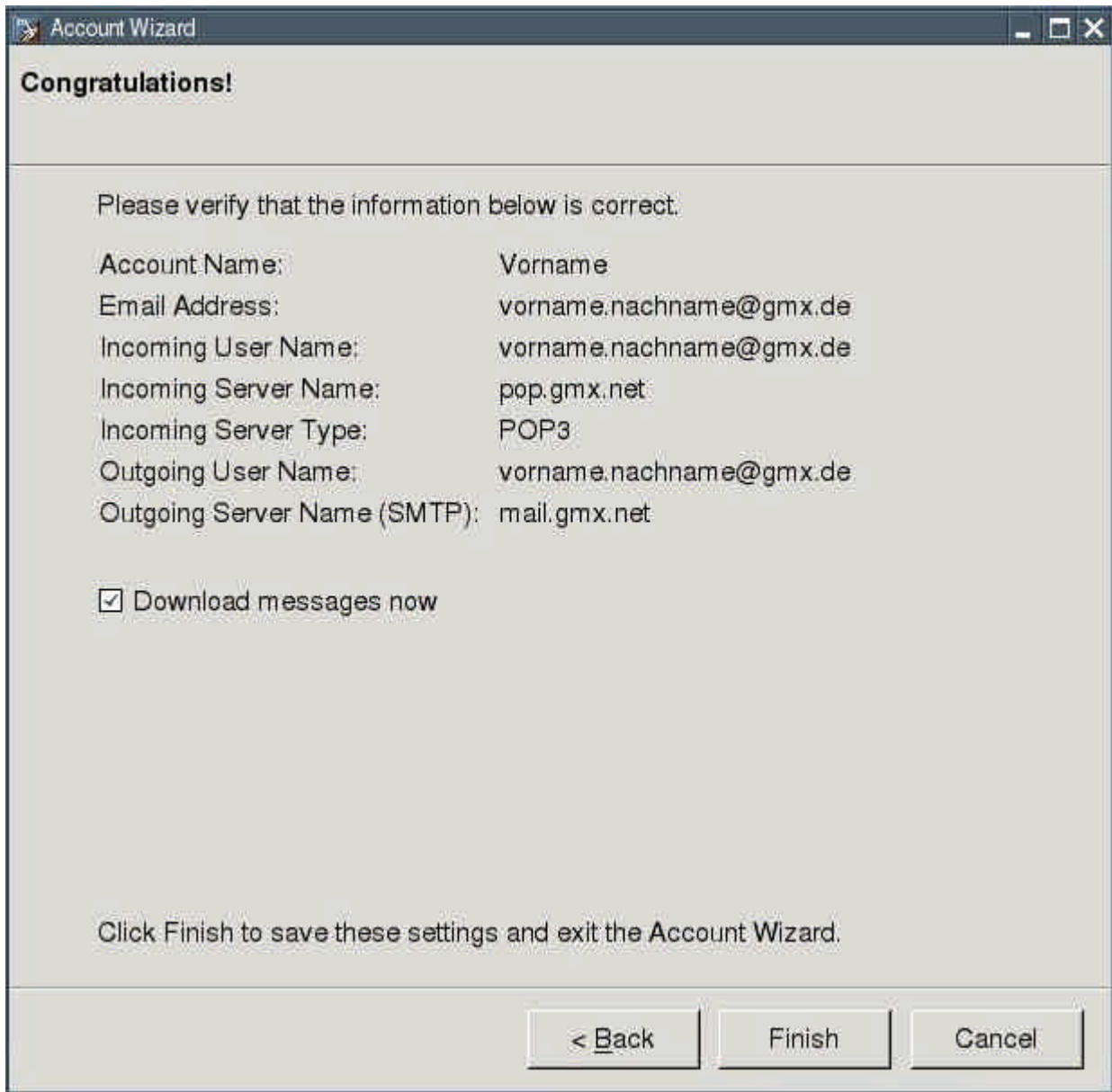
< Back Next > Cancel

Account Name

Enter the name by which you would like to refer to this account (for example, "Work Account", "Home Account" or "News Account").

Account Name:

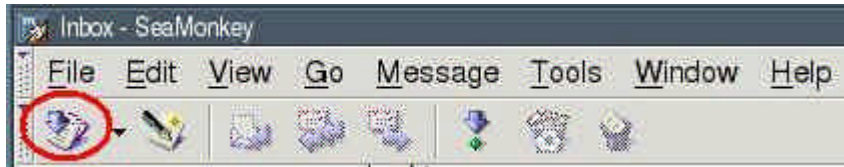
< Back Next > Cancel



After you press the button "Finish" the program automatically downloads your emails from your email account. If you are offline, the following error message appears:



Start an Internet-connection (see chapter 5) and click (in the Seamonkey-Mail-Programm) on the button "Get new messages".



6. How to set up your hardware

6.1 Printer

This is an easy one to get up and running. Just run "Menu | Setup | Printer Wizard" and the directions there should be sufficient to get most printers working. If your printer is not on the list that comes up try one that is similar for example if you have an superjet 23e try the superjet 23 or superjet 23f.

6.2 Scanner

This chapter is still missing. If you want you can help and write this chapter. Please contact mail@puppy-linux.info.

6.3 USB sticks / external harddrive

USB sticks and external harddrives are very simple to use. Start the program "Menu | File managers | Pmount mount/unmount drives" and click on the button "Refresh". Then you click on the USB stick symbol and the file manager ROX will automatically open and show you the files on the USB stick. External harddrives with FAT32-filessystem can be used too. If you changed the file system of the external harddrive e.g. to an ext3-filessystem the program Pmount can not mount the external harddrive. In this case you open a shell and enter:

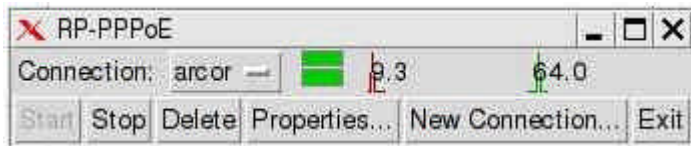
- `mount /dev/sdax /mnt/sdax` (e.g. for the first partition: `mount /dev/sda1 /mnt/sda1`)

7. How to (de)install programs

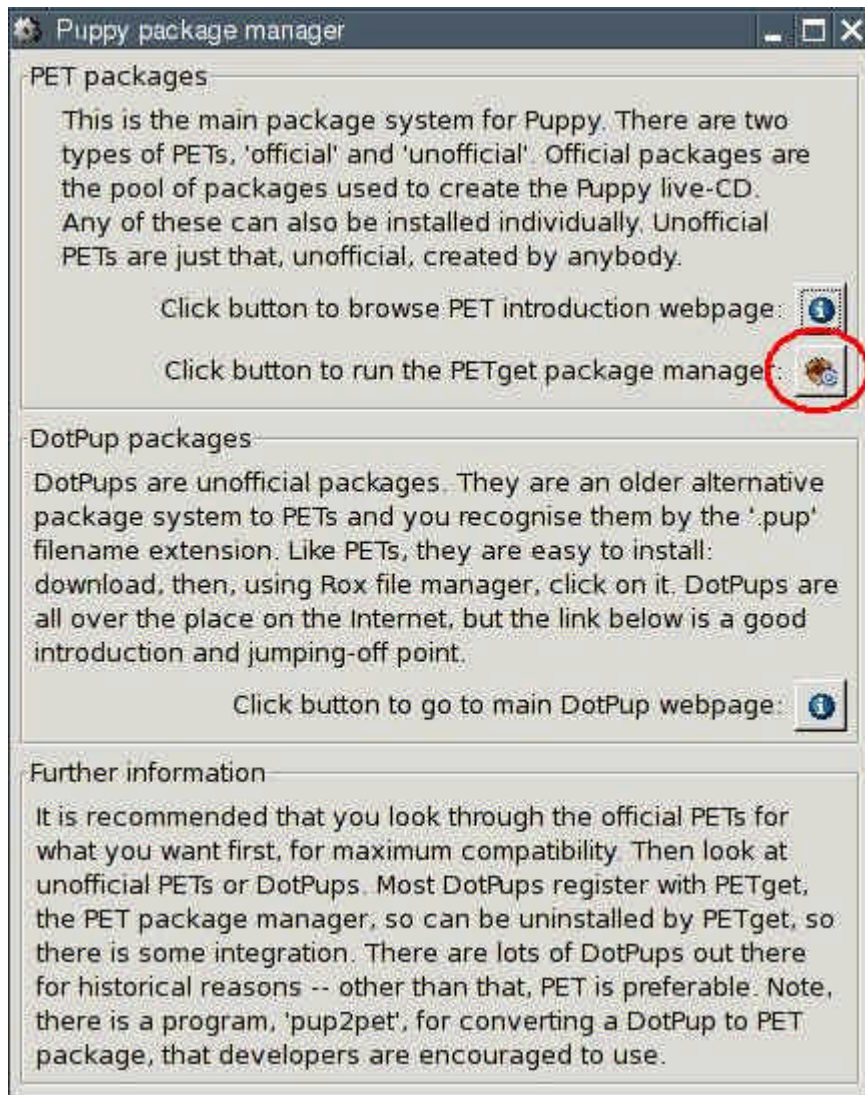
There are different ways of installing programs which are described below. Before an installation it is advisable to backup the pup_save.2fs-file. So you can restore the file, if something goes wrong with the installation.

7.1 How to install official programs

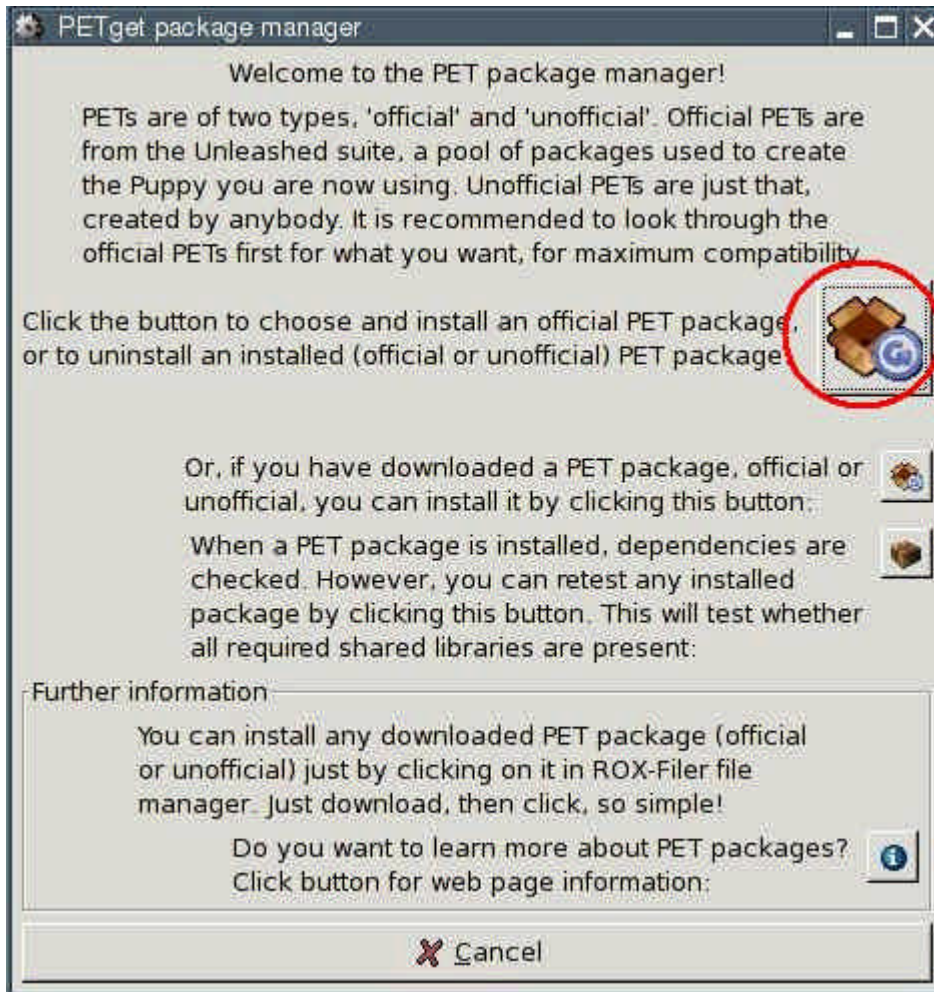
First start an Internet-connection "Menu | Network | Roaring Penguin PPPoE ADSL" (see chapter 5)



Then you start the program "Menu | Setup | Puppy package manager". In the window that appears you click on the second button.

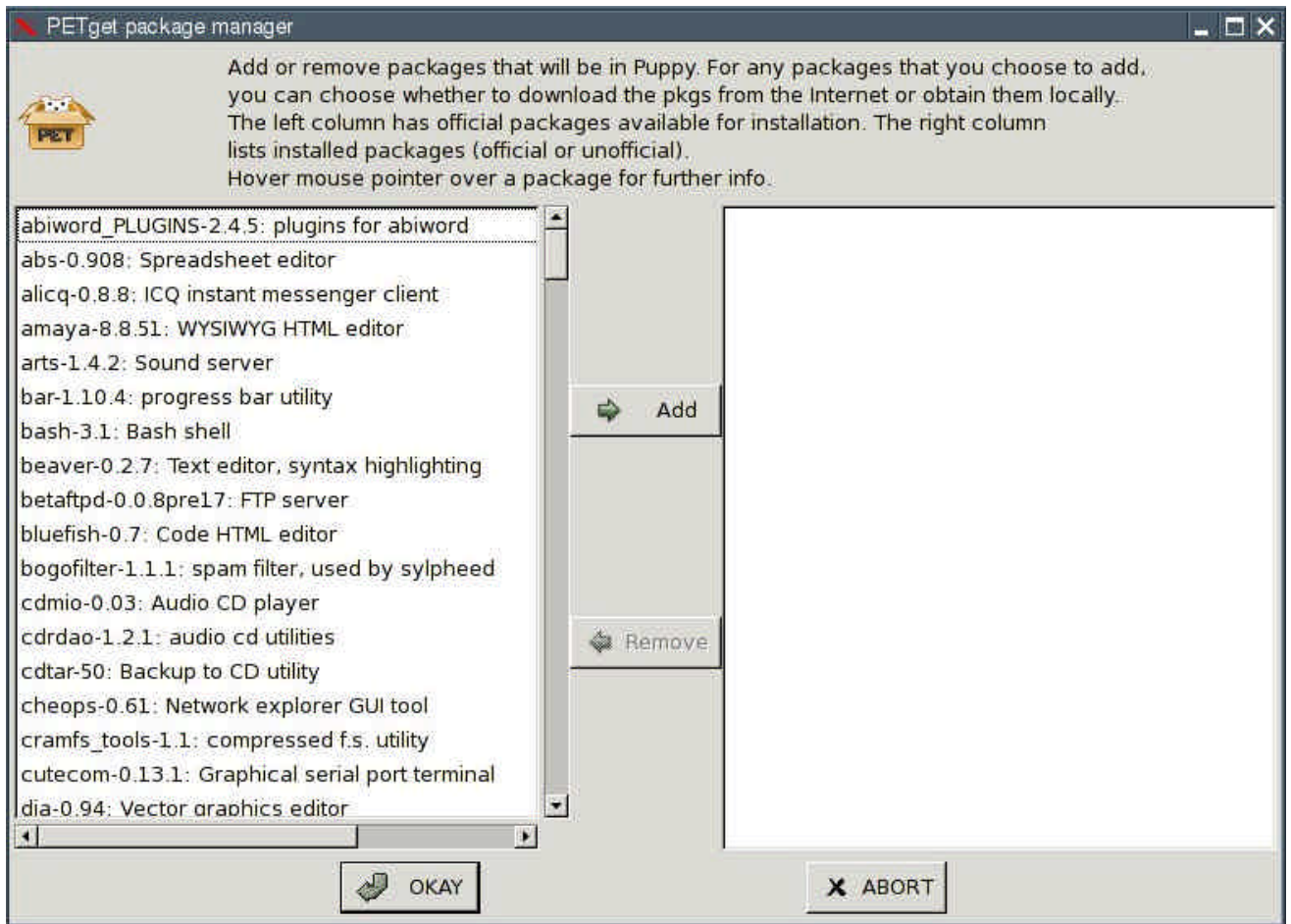


A new window opens.



Click on the first button ("Click the button to choose and install an official PET package..").

A new window appears.



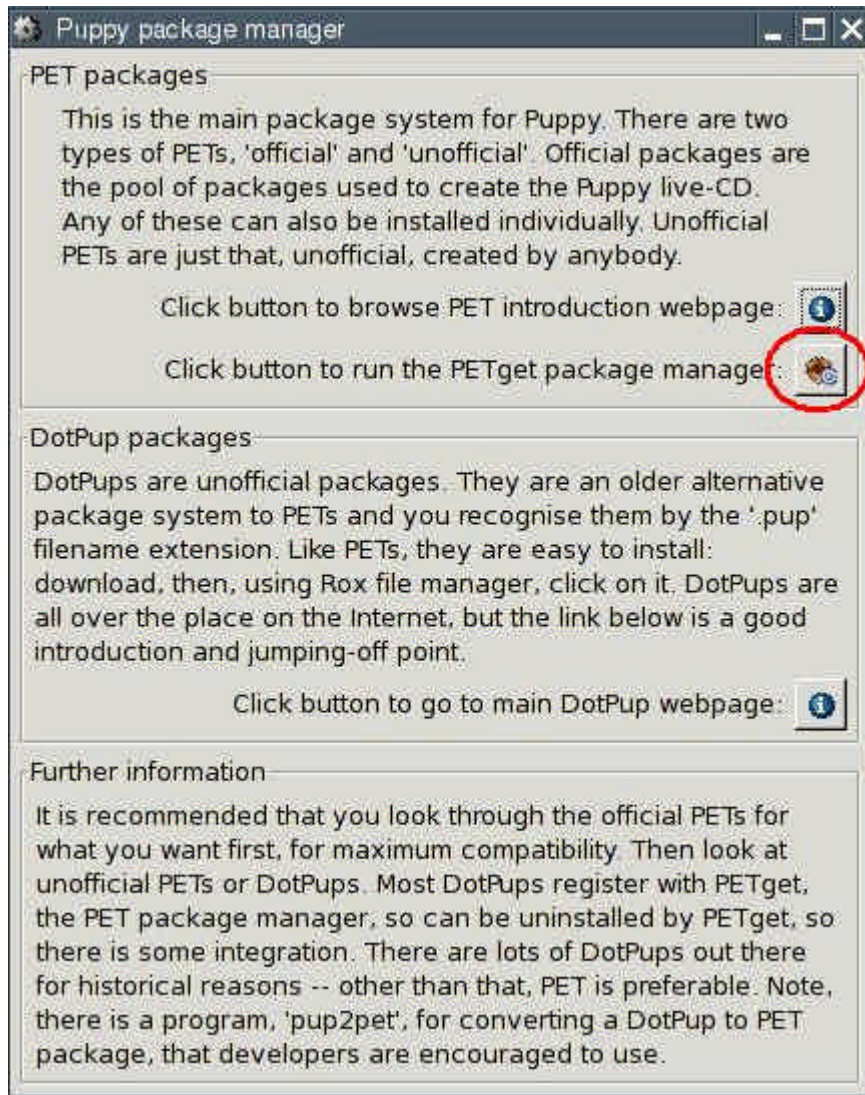
On the left side you can see all available programs. On the right side are the programs already installed (at the beginning this list is empty). Now select in the left list the program which should be installed and click on the button "Add" between the two lists. This transfers the program into the right list. Then you click on the "OKAY" button and the program will be installed.

7.2 How to install further programs

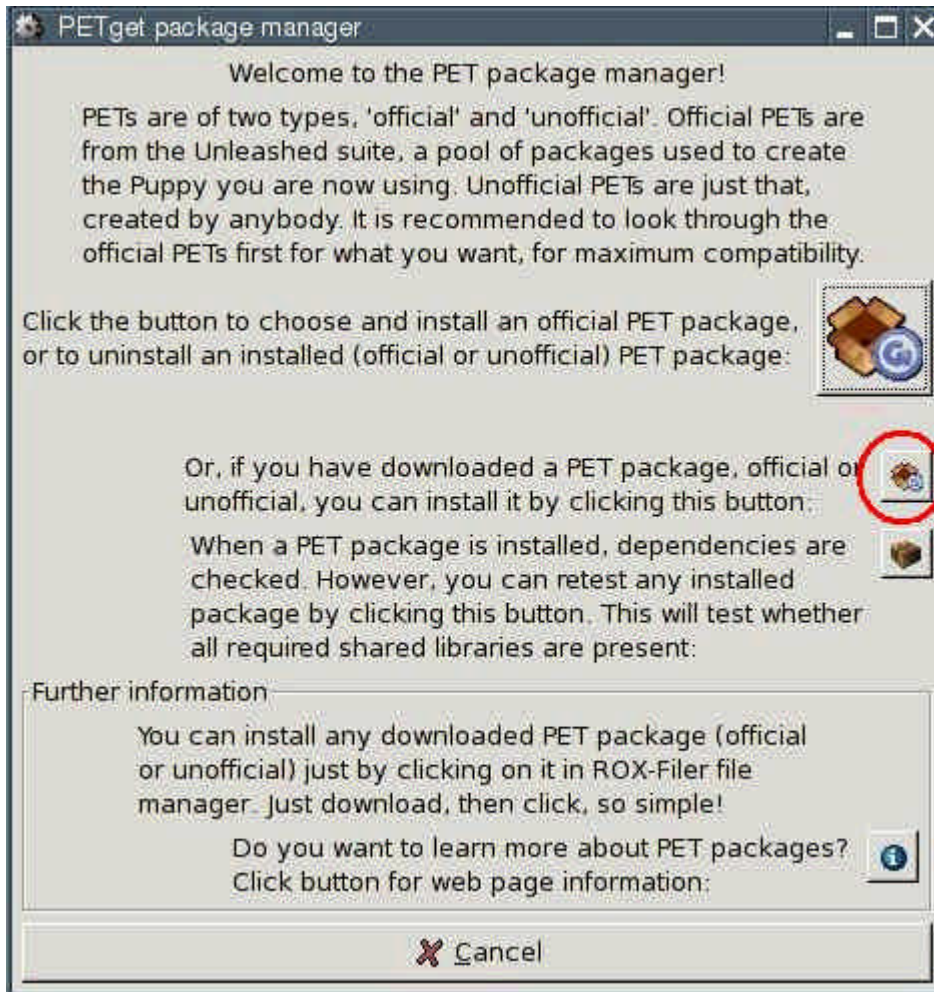
The search for a program, which cannot be installed as an official PETget (see chapter 7.1), should begin in the [Puppy-Forum](#). There is a category called "Additional Software", where you can find many programs to download. The installation is easy using a PETget-program (see chapter 7.2.1) or DotPup-program (see chapter 7.2.2). In addition Debian programs can be installed too (see chapter 7.2.3).

7.2.1 Unofficial PETgets

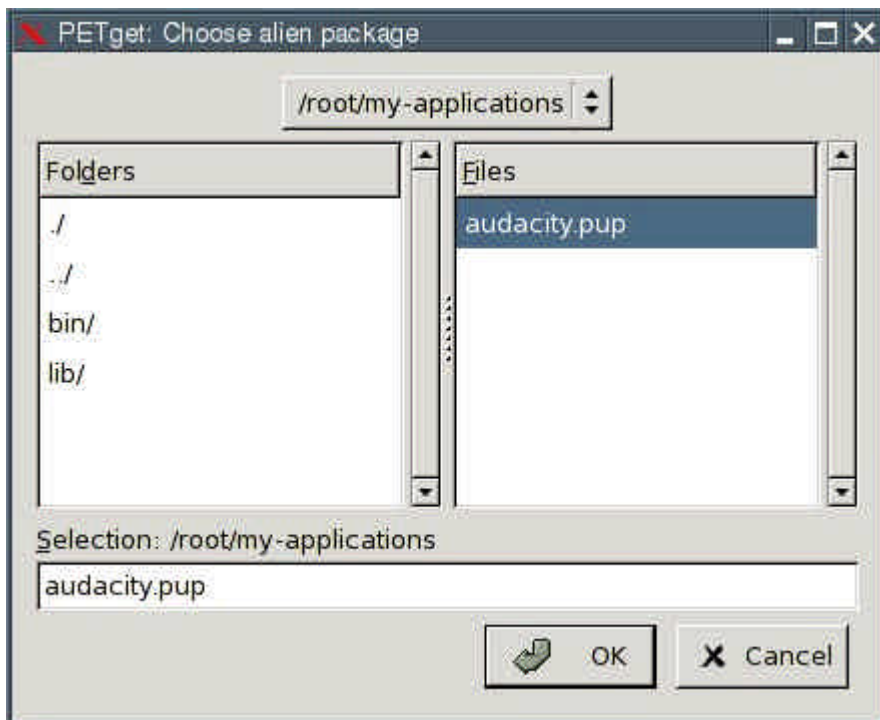
In addition to the official PETget-programs the Puppy-community offers further PETget-programs at the [Puppy-Forum](#). Download the PETget-file and then start "Menu | Setup | Puppy package manager".



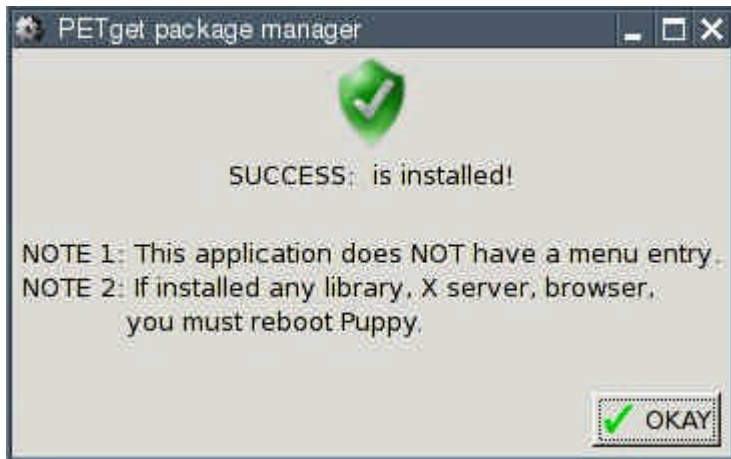
Click on the second button. A new window opens.



Click on the second button. A new window opens.



Choose the PETget-file and click the OK-button.



7.2.2 DotPups

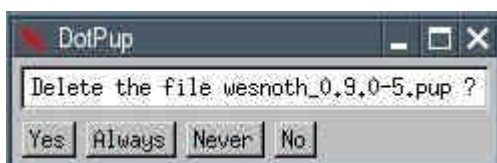
DotPups are programs for Puppy Linux, made by Puppy users. Download the DotPup-file from the [Puppy-Forum](#) (or another Internet site) and click - in the file manager ROX and with the left mouse button - on the file. A window opens:



Click on the button "Unzip". Now a warning message appears.



Click on the "Run" button. Now the program will be installed. After the installation you are asked whether you want to delete the file or not.



If you want to keep the DotPup-file you click on the button "No". Otherwise you click on the button "Yes".

7.2.3 Debian-programs

Debian covers an enormous software range with approximately 15,000 programs. The installation of Debian programs in Puppy is for advanced Linux users only, who are familiar with Debian programs and dependency between the programs.

First you install the PupGet program pb_debianinstaller (see chapter 7.1).

Now you can download programs from the [Debian Internet site](#). There are three versions: stable, testing and unstable. If you do not need the newest program-versions, I recommend a

program from stable, because the stable programs were tested intensively and are in principle error free.

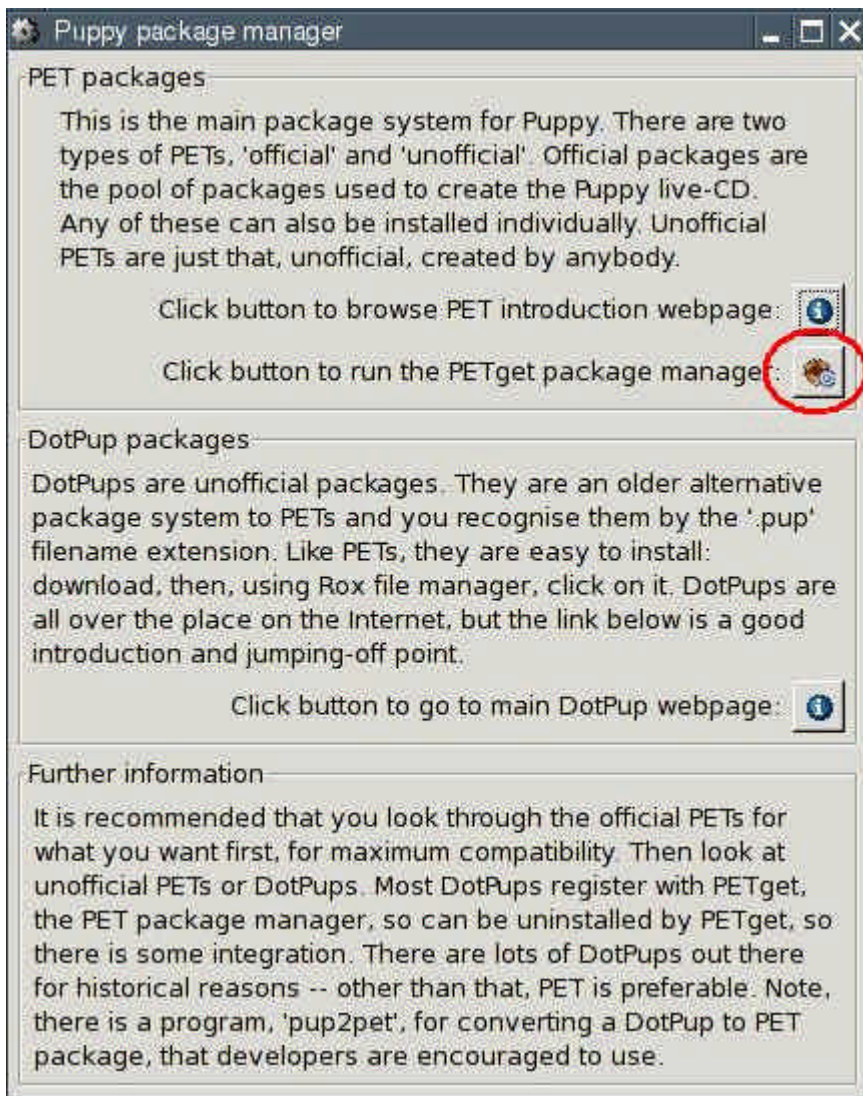
Download the Debian program. Subsequently, you start a shell and enter the following command:

- pb-debianinstaller

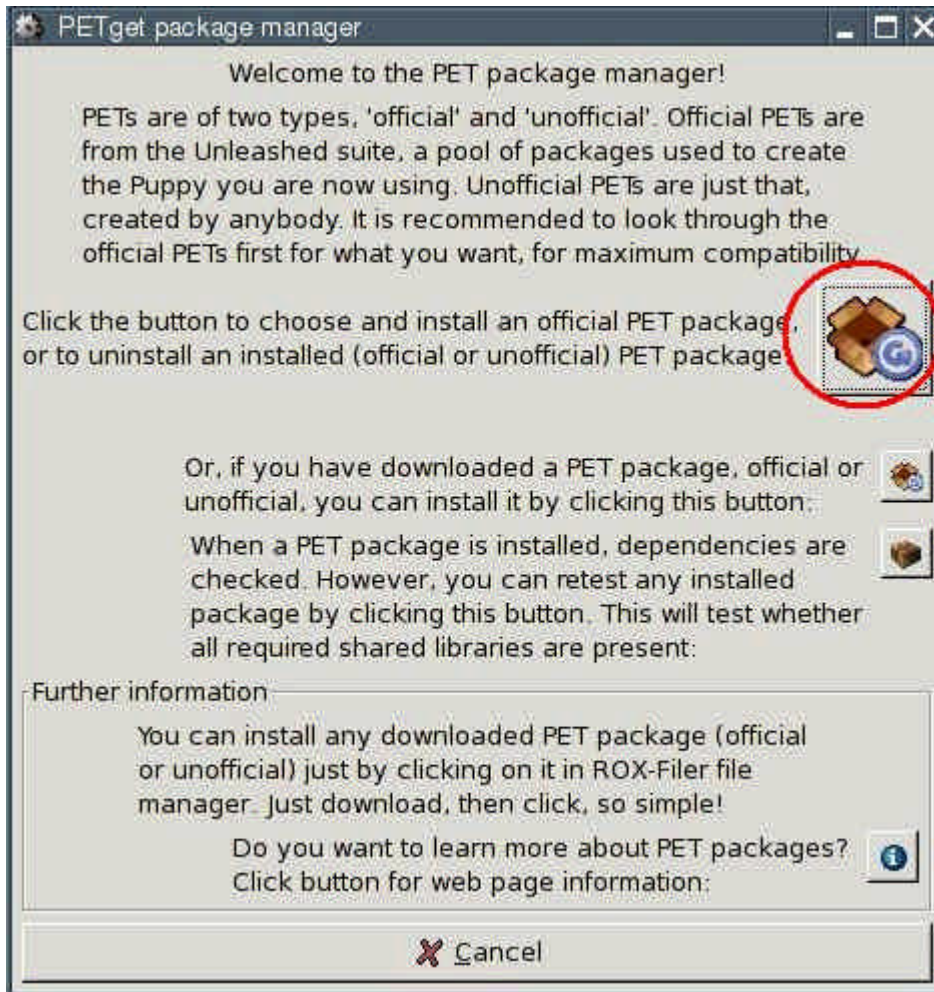
Many Debian programs presuppose that other Debian programs are installed on your PC too. The installer examines whether all necessary programs are installed. If not the installer indicates, which programs are missing. Abort the installation and download the missing programs from the Debian Internet site. Install these programs (they can have further dependencies, so you may have to download still more programs from Debian). At last you can install your program.

7.3 How to deinstall programs

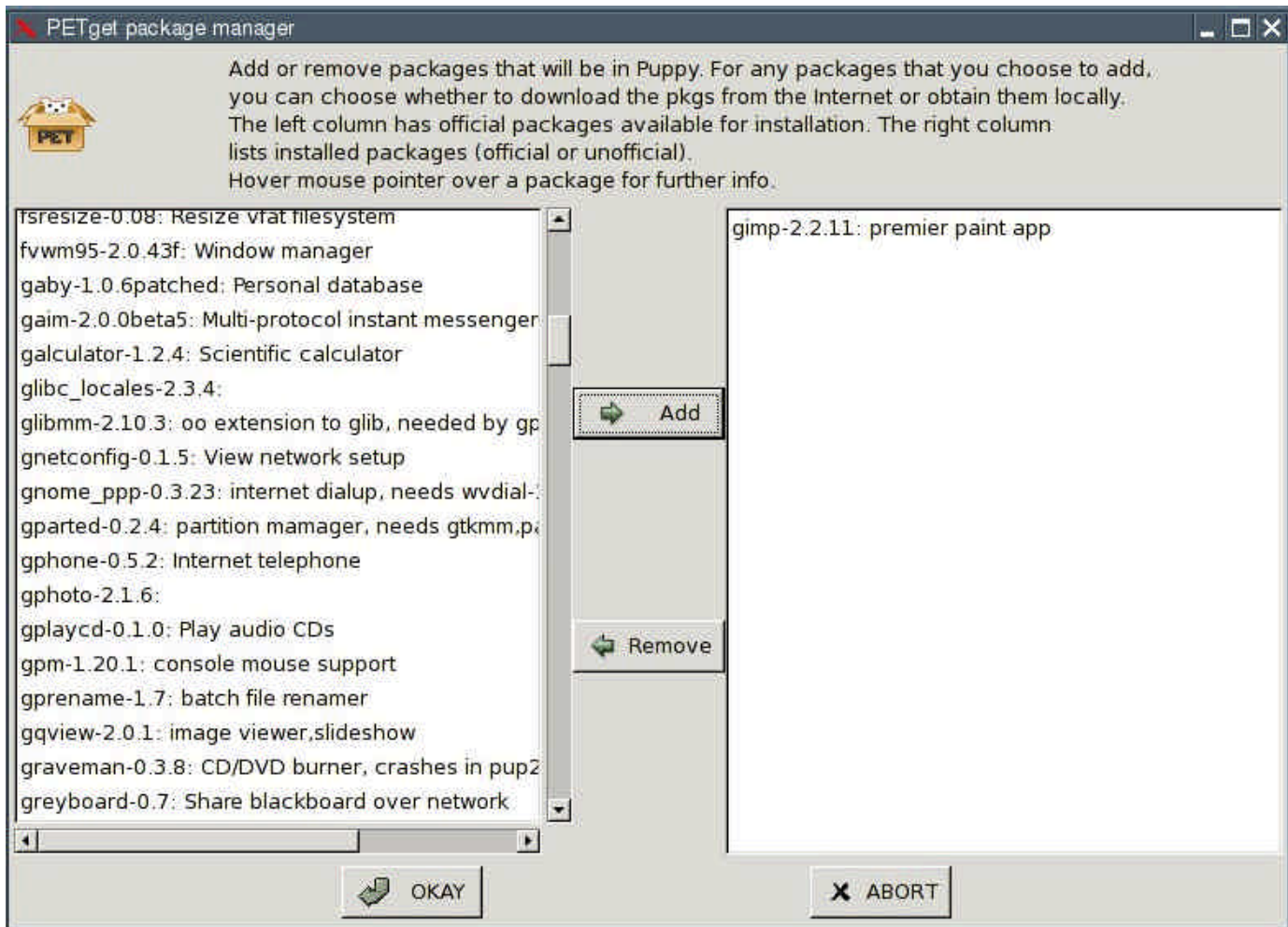
Start the program "Menu | Setup | Puppy package manager".



Click on the second button. A new window opens.



Click on the first button. You get another window:



On the left side you can see all programs available. On the right side you see the programs already installed. Mark in the right list the program, which you would like to deinstall. Click on the button "Remove" between the two lists. Afterwards you press the button "OK".

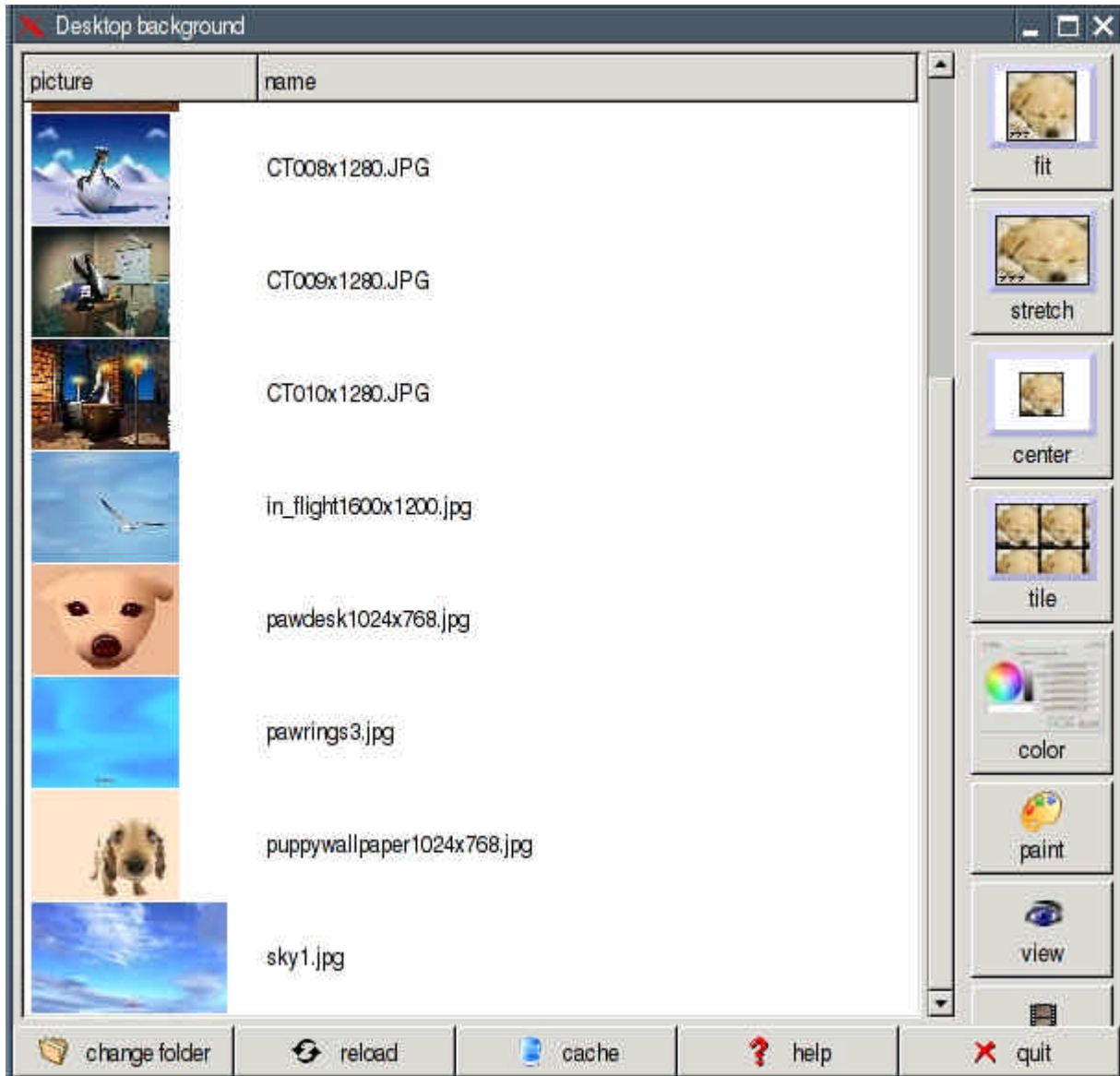
Programs, which are on the Puppy CD-ROM, can not be deinstalled. But you can delete these programs from the menu (see chapter 8.2).

[previous page](#) | [print version](#) | [next page](#)

8. How to setup Puppy

8.1 How to change the background desktop-image

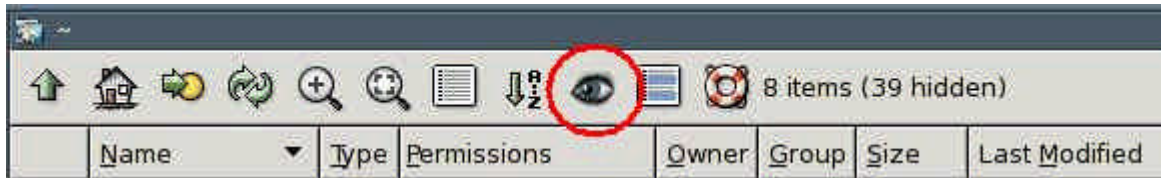
If you want to use another background picture, copy your picture into the directory /usr/share/backgrounds. Subsequently, you start the program "Menu | Desktop | Puppybackground desktop image". On the left side are the available background pictures. Select a picture and click on one of the four buttons fit / stretch / center / tile. The background desktop-image is changed immediately.



8.2 How to create your own menu

Puppy uses JWM (Joes Windows manager) as windows manager. You can adapt JWM to your needs. If you want to change the program-menu follow these commands:

- Start the program "Menu | File managers | puppyROX file manager"
- Change to the directory /root
- Click on the symbol "Show all files"



- Right-click on the file .jwmrc and select "Open As Text". The .jwmrc-file is opened with Geany text editor now.
- Edit the file. The file .jwmrc has the following structure:

```
<Menu label="MeinMenu" icon="MeinIcon" height=" 16">  
  <Program label="MeinProgramm"  
icon="MeinProgrammIcon" >programmaufruf</Program>  
  <Program label="MeinProgramm"  
icon="MeinProgrammIcon" >programmaufruf</Program>  
</Menu>
```

Beispiel:

```
<Menu label="Mein Menu" icon="face-win.xpm" height=" 16">  
  <Program label="ROX" icon="mini-diskette.xpm" >rox</Program>  
  <Program label="CD/DVD Writer" icon="mini-cd.xpm" >tkdvd</Program>  
  <Separator/>  
  <Program label="Abiword" icon="mini-edit.xpm" >abiword</Program>  
</Menu>
```

- Save the file and quit Geany.
- Restart JWM: "Menu | Shut Down | JWM restart"

Hint: installing a new PetGet program rebuilds your programs menu automatically. This will overwrite your personal settings, so if you want to keep them, backup your /root/.jwmrc file beforehand and restore the settings after the installation.

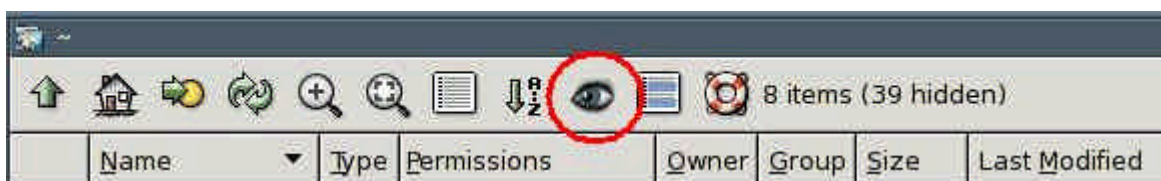
You can find further information about JWM on these Internet sites:

- [JWM Homepage](#)
- [JWM Configuration](#)

8.3 How to add a program icon at the tray zone

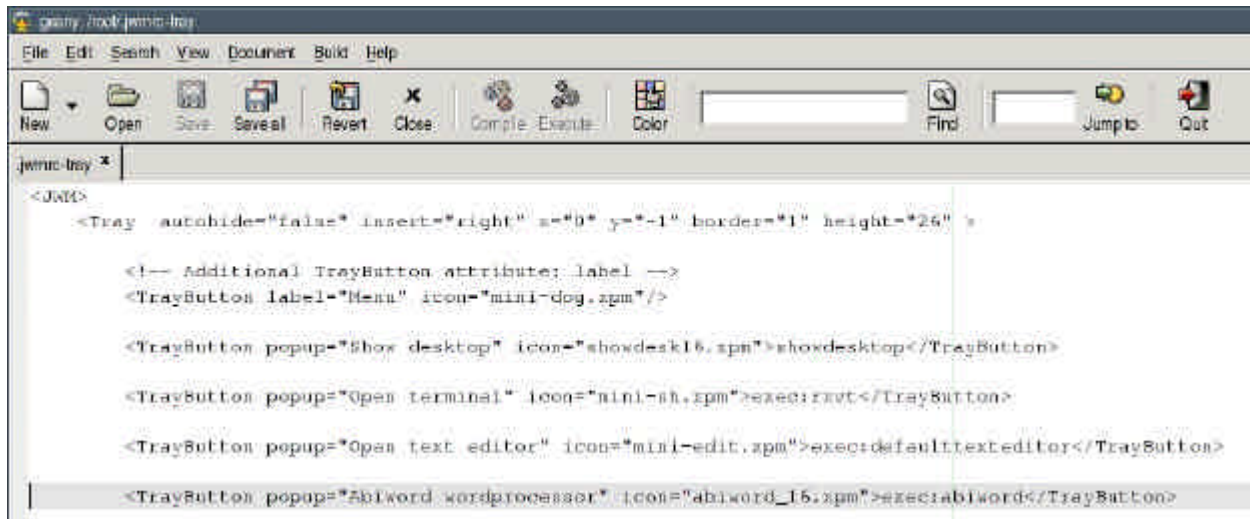
If you want to add a program icon at the tray zone enter these commands:

- Start the program "Menu | File managers | puppyROX file manager"
- Change to the directory /root
- Click on the symbol "Show all files"



- Right-click on the file .jwmrc-tray and select "Open As Text". The .jwmrc-tray file is opened with Geany text editor now.

- If you want to add e.g. abiword, add the following line:



```
<JWM>
  <Tray autohide="false" insert="right" x="0" y="-1" border="1" height="26" >
    <!-- Additional TrayButton attribute: label -->
    <TrayButton label="Menu" icon="mini-dog.xpm"/>
    <TrayButton popup="Show desktop" icon="showdesk16.xpm">showdesktop</TrayButton>
    <TrayButton popup="Open terminal" icon="mini-sh.xpm">exec:rxvt</TrayButton>
    <TrayButton popup="Open text editor" icon="mini-edit.xpm">exec:defaulttexteditor</TrayButton>
    <TrayButton popup="Abiword wordprocessor" icon="abiword_16.xpm">exec:abiword</TrayButton>
```

- Save the file and quit Geany.
- Restart JWM: "Menu | Shut Down | JWM restart"

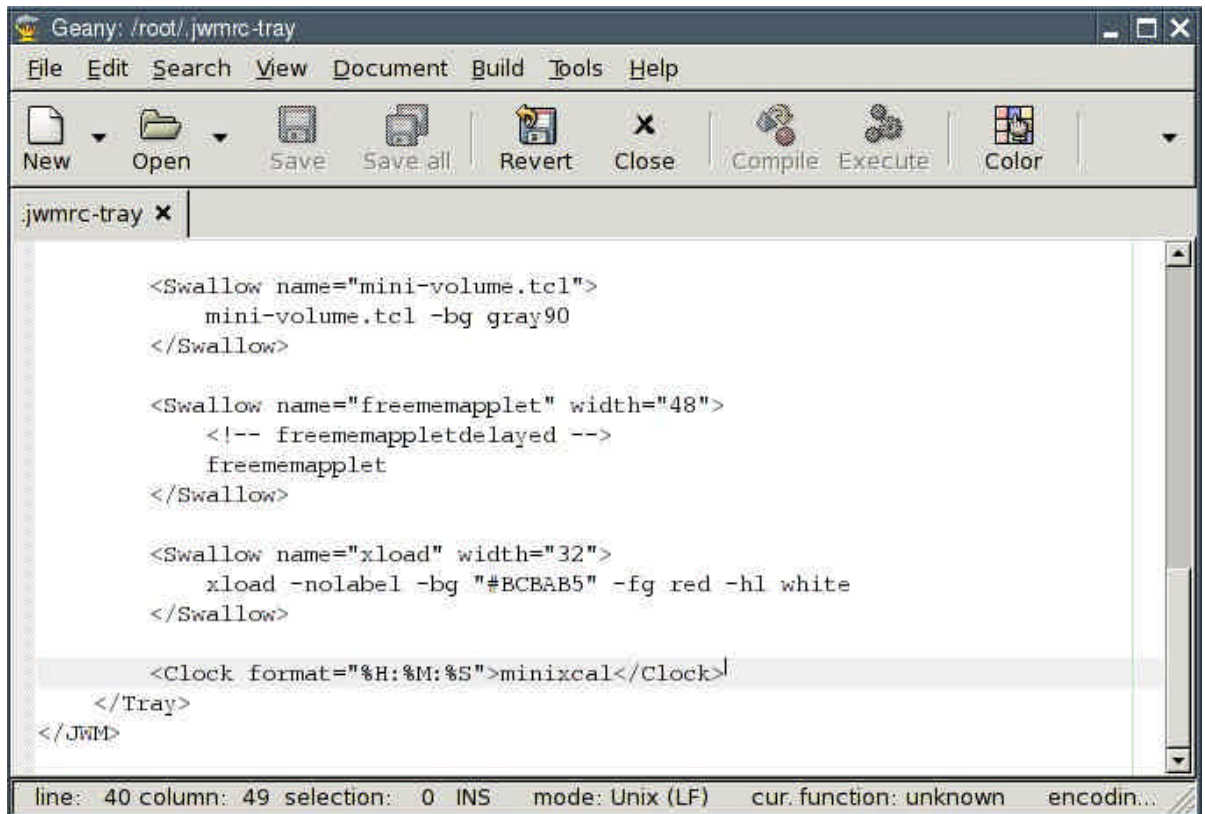
8.4 Setup time and date

To set date and time start the program "Menu | Desktop | Set date and time". If you want to change the clock from 12-hours to 24-hours-display enter these commands:

- Start the program "Menu | File managers | puppyROX file manager"
- Change to the directory /root
- Click on the symbol "Show all files"



- Right-click on the file .jwmrc-tray and select "Open As Text". The .jwmrc-tray file is opened with Geany text editor now.
- At the end of the file you see the "clock"-command. Edit this line as shown:



```
<Swallow name="mini-volume.tcl">
  mini-volume.tcl -bg gray90
</Swallow>

<Swallow name="freememapplet" width="48">
  <!-- freememappletdelayed -->
  freememapplet
</Swallow>

<Swallow name="xload" width="32">
  xload -nolabel -bg "#BCBAB5" -fg red -hl white
</Swallow>

<Clock format="%H:%M:%S">minixcal</Clock>
</Tray>
</JWM>
```

- Save the file and quit Geany.
- Restart JWM: "Menu | Shut Down | JWM restart"

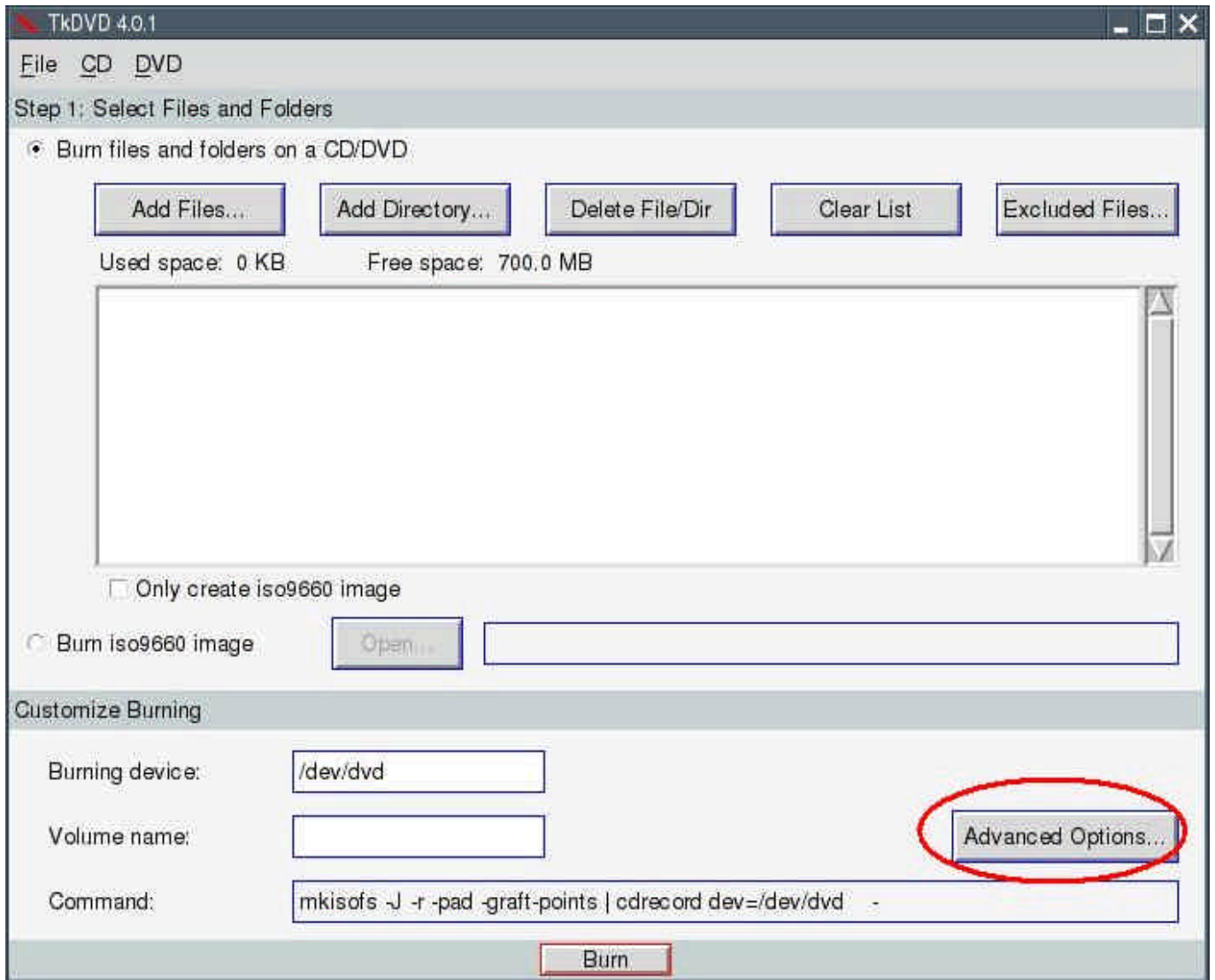
8.5 How to store / remove a desktop icon

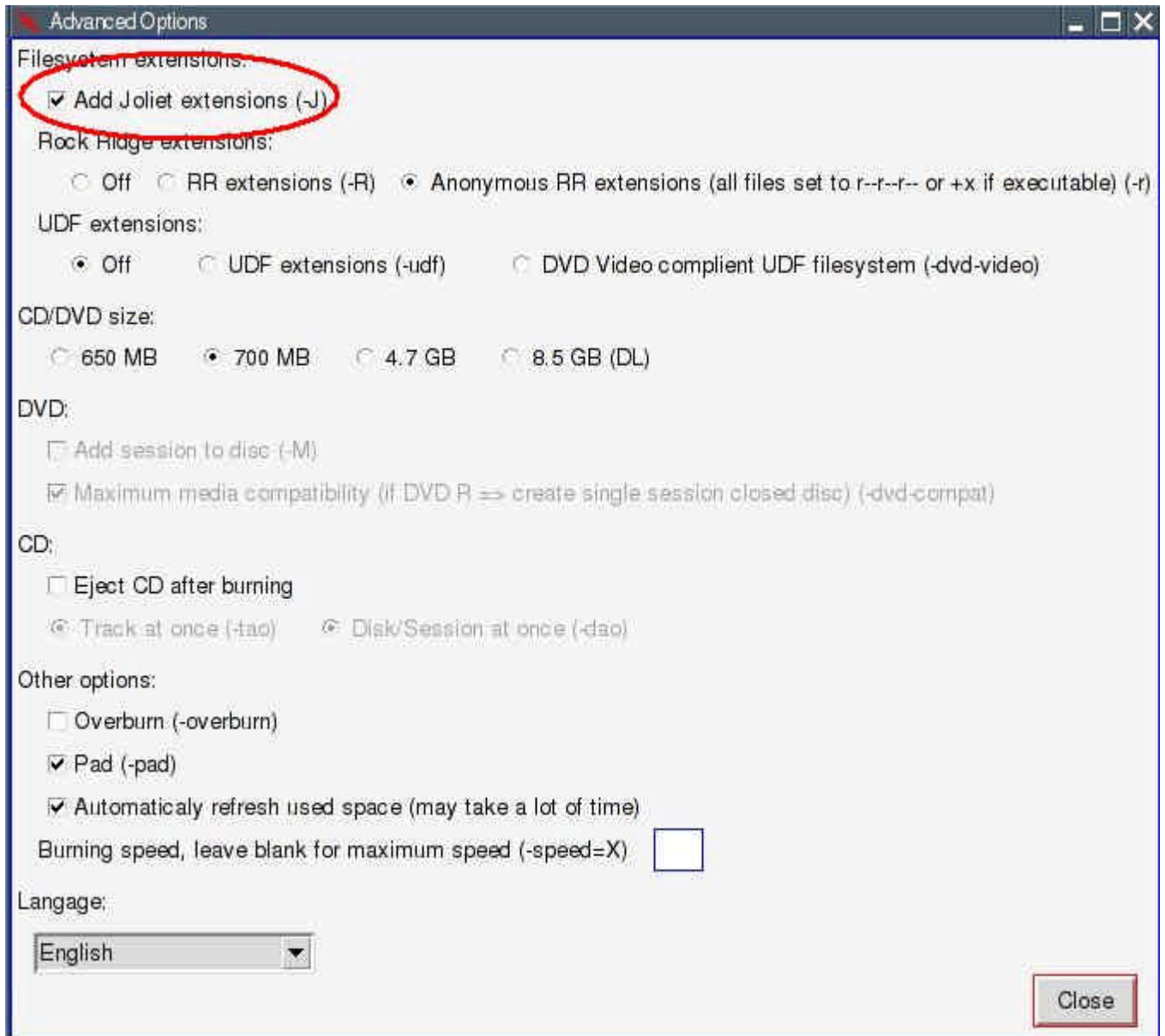
In order to store a desktop icon with a link to a program, directory or file, you can drag the file with the left mouse button from the file manager ROX onto the desktop.

If you want to remove a desktop icon right-click on the icon and select "Remove Item".

8.6 Setup DVD/CD-burning program TkDVD

Click on the button "Advanced Options" and enter a check mark at the option "Filesystem extensions | Add Joliet extensions". This enables you to use long filenames.

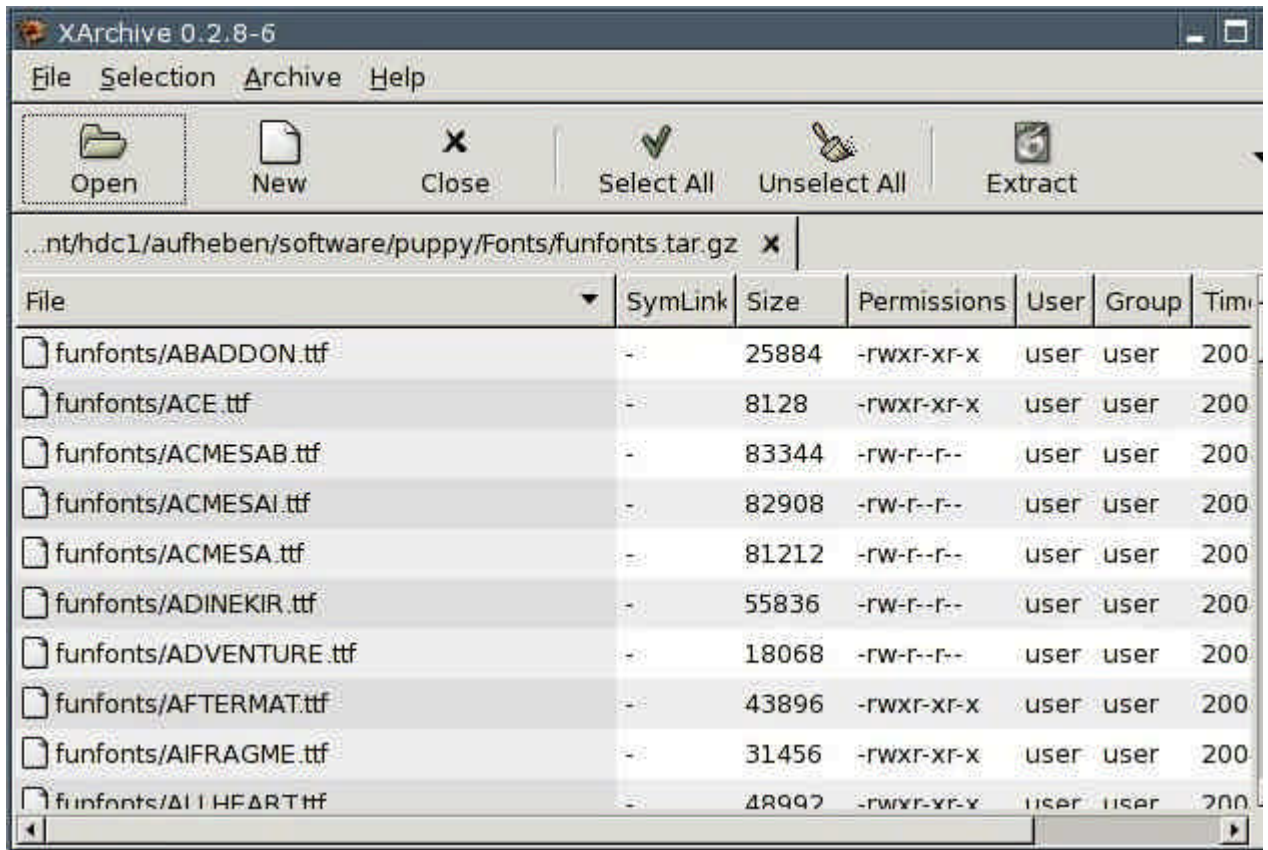




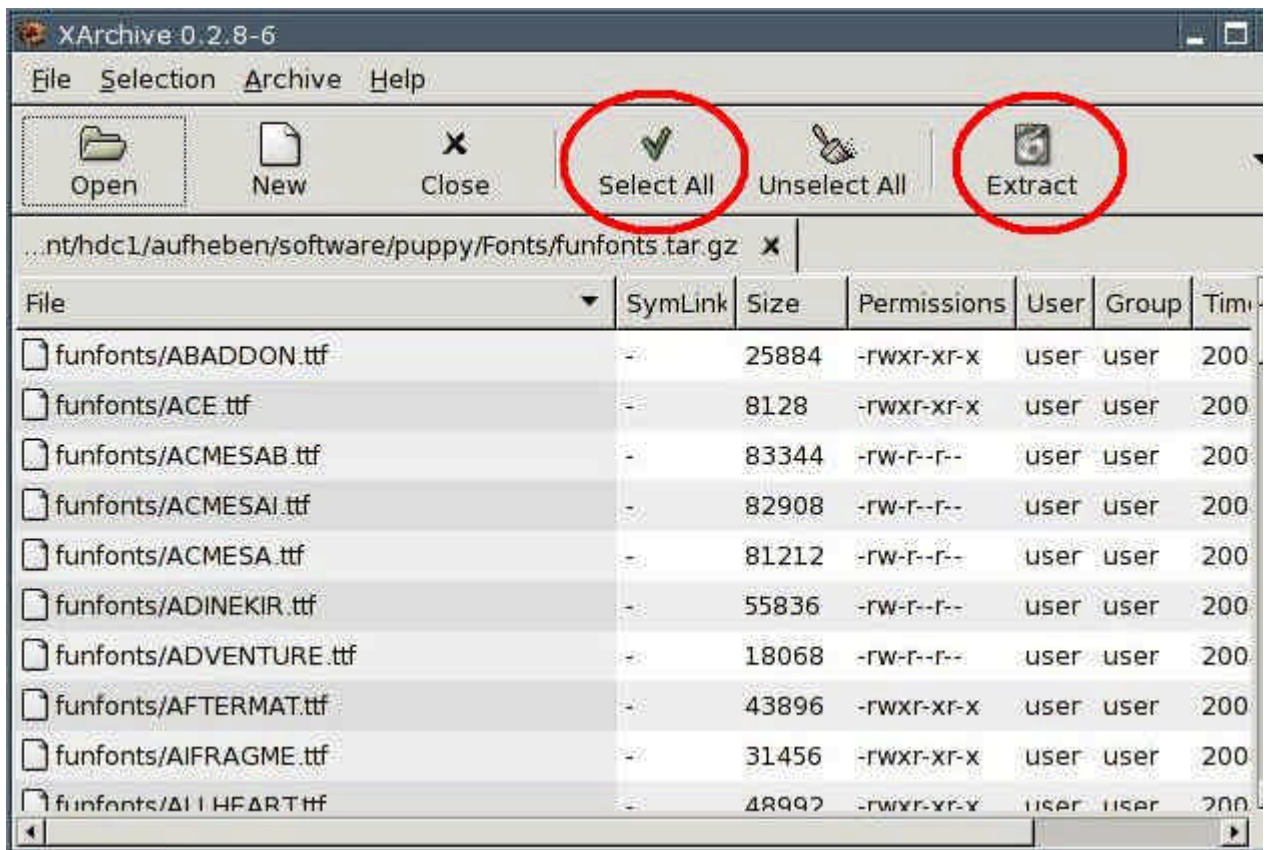
8.7 How to install fonts

You can install additional fonts e.g. to use in Abiword. Download Download TrueTypeFonts (TTF) from the internet and save the files into /usr/X11R7/lib/X11/fonts/TTF:

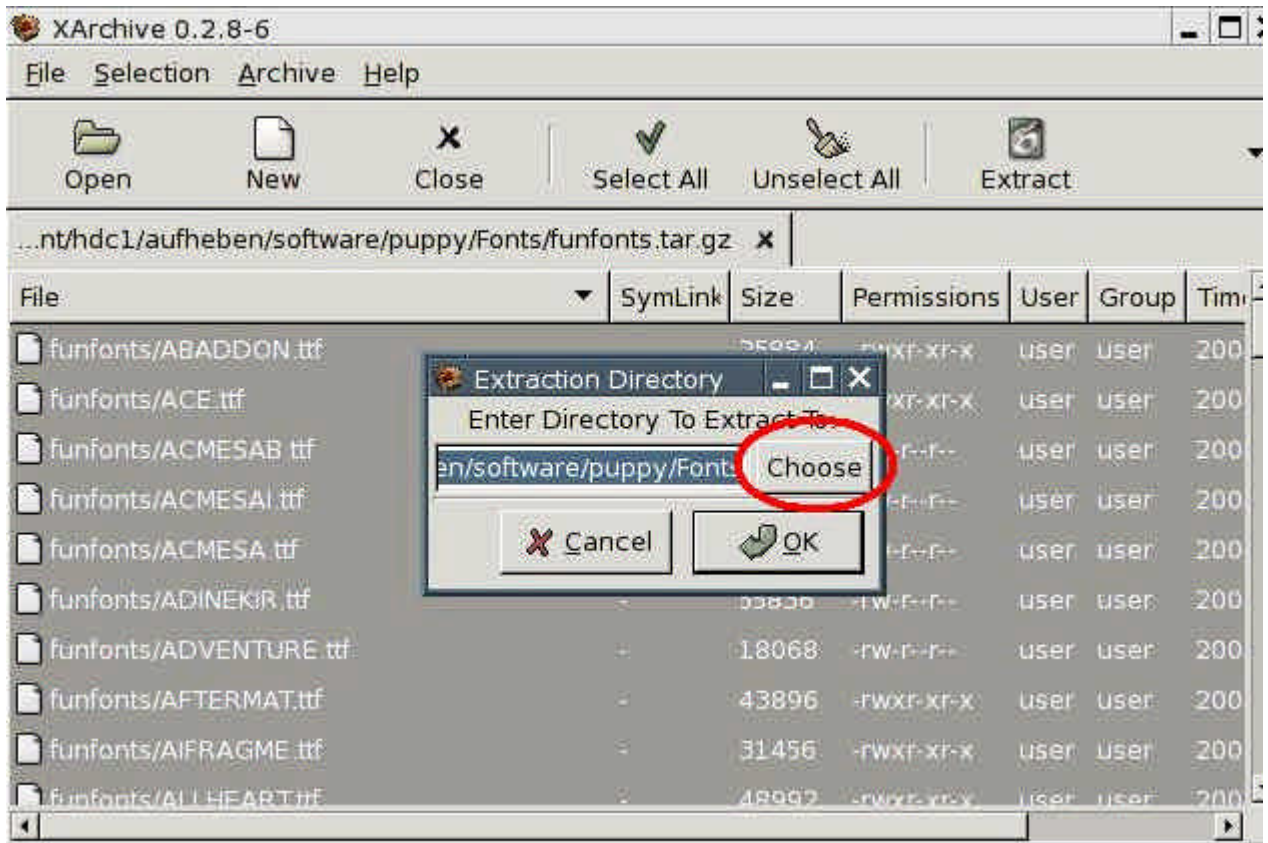
- Download from <http://thelinuxbox.org> files such as FunFonts and Microsoffonts, for example. Another good Internet page is <http://wiki.scribus.net> .
- Left-click on the file. XArchive opens.



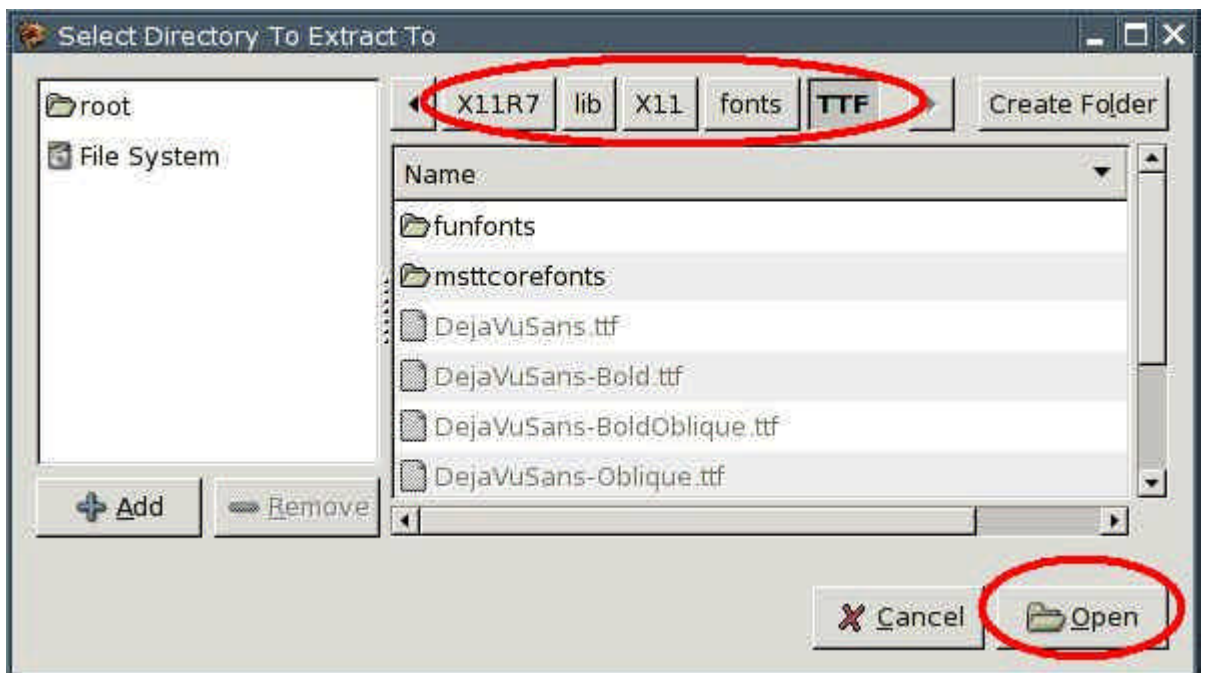
- Click on the button "Select All" and then on the button "Extract". A new window appears.



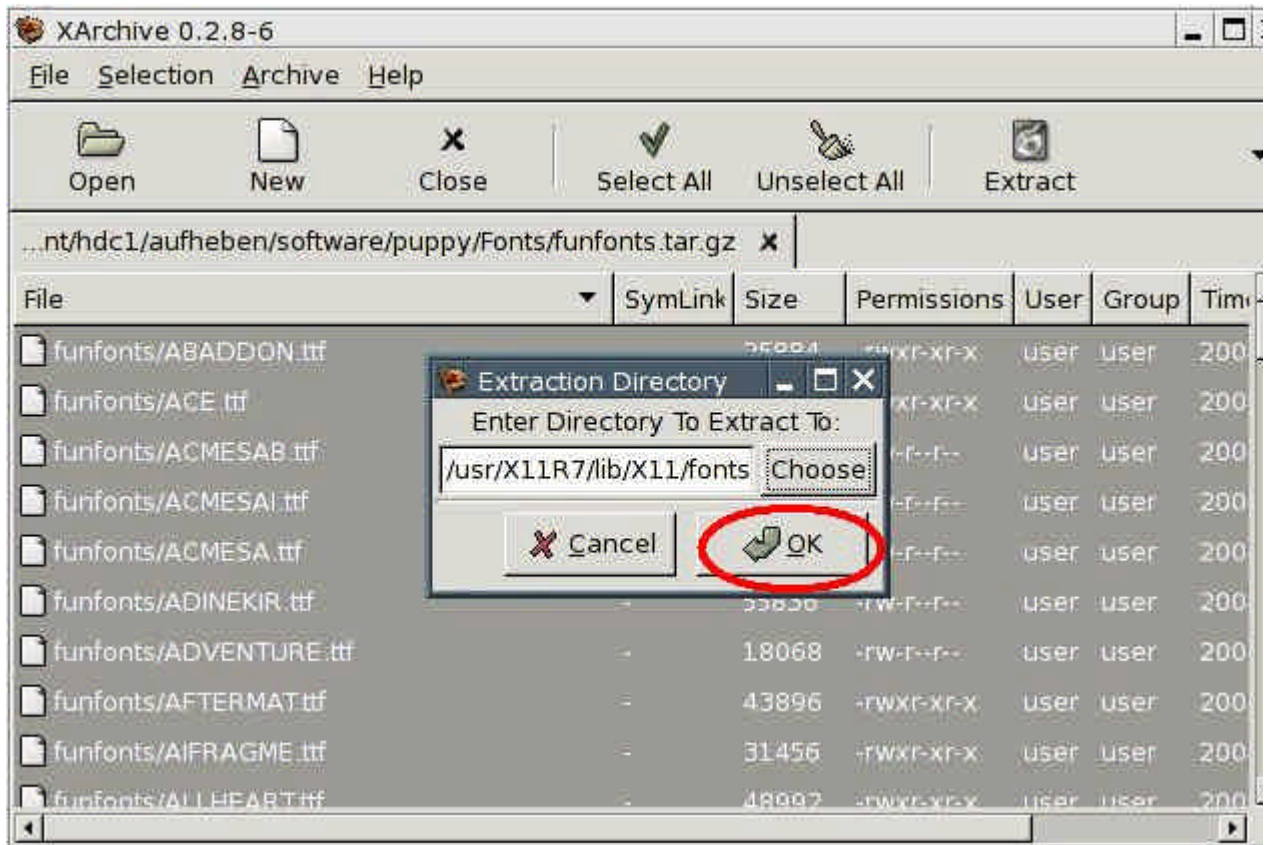
- Click on the button "Choose".



- Go to the directory /usr/X11R7/lib/X11/fonts/TTF. Click on the button "Open".



- Click on the button "OK".



Now the file is unpacked and the fonts will be copied into the directory. Do the same with all of your TTF-files. If you start Abiword afterwards, the fonts are available.

9. How to make a backup

9.1 How to backup pup_safe.2fs

The file pup_safe.2fs contains the personal settings and your personal files, if the files are not stored on another partition (e.g. harddrive, USB stick). The backup is very simple. Either you start Puppy with the boot-option "puppy pfix=ram" or you start your old operating system (Windows). Then you copy the file onto the backup medium (e.g. another harddrive, USB stick, CD-ROM).

9.2 How to restore files out of the pup_save.2fs-file

You can see the content of the file pup_safe.2fs only if the file is loaded while booting Puppy. If the file cannot be loaded, there is nevertheless a way of getting into the file and saving the content:

- Start Puppy with the boot-option "puppy pfix=ram".
- Then you open a shell and enter the following command:

```
mount -o loop /mnt/hdax/pup_save.2fs /mnt/data
```

/mnt/hdax is the partition you stored the pup_save.2fs-file (e.g. mount -o loop /mnt/hda2/pup_save.2fs /mnt/data).

- Now you can see the content of the pup_save.2fs-file at the directory /mnt/data and you can copy all files to another harddrive or USB-stick.

9.3 Backup with rsync

If you do not store your files in the file pup_save.2fs but on a partition with ext2/ext3-filesystem, you can backup the files with the rsync-command. I recommend a second (external) harddrive as backup medium. The backup harddrive must have an ext2/ext3-filesystem too (see chapter 3.3.2).

Rsync synchronizes the backup with your current files and copies only the new and/or changed files on the backup medium. At the same time rsync deletes (if you want) all files from the backup medium, which you don't have anymore. In order to be able to use rsync, you must install the program first. (Search at the [Puppy-Forum](#)).

Before you make a backup ensure that your files were not compromised (see chapter 11.4).

The following example assumes that you saved your files at the directory /myData and that the backup directory is /backup.

Open a shell and enter the following commands:

- mount /dev/hda4 /mnt/hda4

Mount the partition, on which you stored your file. It must be a partition with a Linux-filesystem, e.g. ext2/ext3

- mount /dev/sda1 /mnt/sda1

Mount the partition, on which you want to store the backup, e.g. an external harddrive with ext2/ext3-filesystem.

- rsync -av --delete /mnt/hda4/myData/ /mnt/sda1/backup

Backup the files. If there is no backup-directory, create one with the command `mkdir /mnt/sda1/backup`

- `umount /dev/hda4`

Unmount the partition

- `umount /dev/sda1`

Unmount the partition

Note: The diagonal stroke behind `/mnt/hda4/myData/` is important. Only the files within the directory `/mnt/hda4/myData` are copied, not the directory `myData` itself.

These are the `rsync`-options:

- `a`: all directories and files are copied
- `v`: you can see the progress on the screen
- `delete`: directories and files, that no longer exist in `myData` are deleted from the backup. If you don't like this, leave out the `--delete` option.

With the following commands you can restore your files from the backup:

- `mount /dev/hda4 /mnt/hda4`
- `mount /dev/sda1 /mnt/sda1`
- `rsync -av --delete /mnt/sda1/backup/ /mnt/hda4/myData`
- `umount /dev/hda4`
- `umount /dev/sda1`

10. Multiuser

Puppy is not developed as a multi-user distribution. In contrast to other distributions each user has full access to all files, programs and personal data. Nevertheless there are some options for multiusers.

10.1 How to personalise the pup_save.2fs-file

If several persons work with Puppy, you can assign a pup_save.2fs-file to each person. In this way each person can configure Puppy individually and store his personal file in his own pup_save.2fs-file.

All pup_save.2fs-files must be in the same directory and must begin with "pup_save". For example, if there are two users Julia and Alexander you make a copy of the original pup_save.2fs-file first. Then you rename the original file as pup_save_Julia.2fs and the copied file as pup_save_Alexander.2fs. When starting Puppy asks which pup_save.2fs-file to use.

10.2. Multisession

As described in chapter 4.4, each user can use its own Puppy CD/DVD with his programs and his personal files. To do so use the boot option multi-session. Even though multi-session is really interesting I am hesitant to save on the same CD-/DVD-data medium again and again. I would always be afraid of losing my files.

11. Security

11.1 Live-CD

If you start Puppy from CD-ROM (or from a CD-image on your harddrive, see chapter 4.3) no potentially harmful programs can install on your computer. With every reboot all potential malware is gone.

However you are not wholly protected against malware while you are online, because (in theory) malware can be installed on your computer and can be active until the next reboot. That is why you should always run a firewall (see chapter 5). Besides you can store checksums of all your files (see chapter 11.4) to make sure, no one has manipulated your files.

11.2 Root

In contrast to most other Linux distributions Puppy does not differentiate between a normal user and the administrator root. Rather you always works as root, which simplifies the use of Puppy. The question arises if it is unsecure to work as root and to have full access to all files, programs and data.

For the normal home user, there are no special risks compared to other Linux distributions. On the contrary, Puppy is probably a bit safer than many other distributions.

First let's analyze the risk of a distribution, which differentiates between user and root. The user works as a normal user, who does not have privileges to write/delete programs and system files. An intruder can compromise only the user's files. However the intruder has an entrance to the system and can try to gain root-privileges (find the password file, use exploits to transfer malware code and so on), and afterwards try to get access to all files.

As long as Puppy starts from CD-ROM (and is not installed on the harddrive) the program-files and system-files are secure. Everytime you reboot any malware programs, which an intruder could have left, are gone. Of course your own files stored into the pup_save.3fs-file or on a harddrive can be compromised by an intruder, but this can happen to the normal user of another Linux-distribution as well. If you want to be safe from intrusion, store checksums of all files and backup your files regulary (see chapters 9 and 11.4).

11.3 Firewall and daemons

The firewall (see chapter 5) should always be active. You can configure which ports are open to the Internet. Ideally all ports are closed. You should open only the ports you need to use. If you need some ports occasionally, keep the ports closed when not in use.

An open port is normally not risky in itself. Only if a server-program (called daemon) runs on your computer and waits at the port for inquiries, can it become dangerous. Therefore no daemons should run on your PC unless required.

The following instruction shows which ports are open and which daemons run:

- Install the Program nmap. Nmap is available as a PETget (see chapter 7.1).
- Open a shell and enter:

```
nmap localhost
```

Now you see the opened ports. If you are running Puppy at home without a home-network all ports should be closed.

- The following command shows all daemons running:

```
netstat -anp --ip
```

Now you see the running daemons. If you are running Puppy at home no daemons should run.

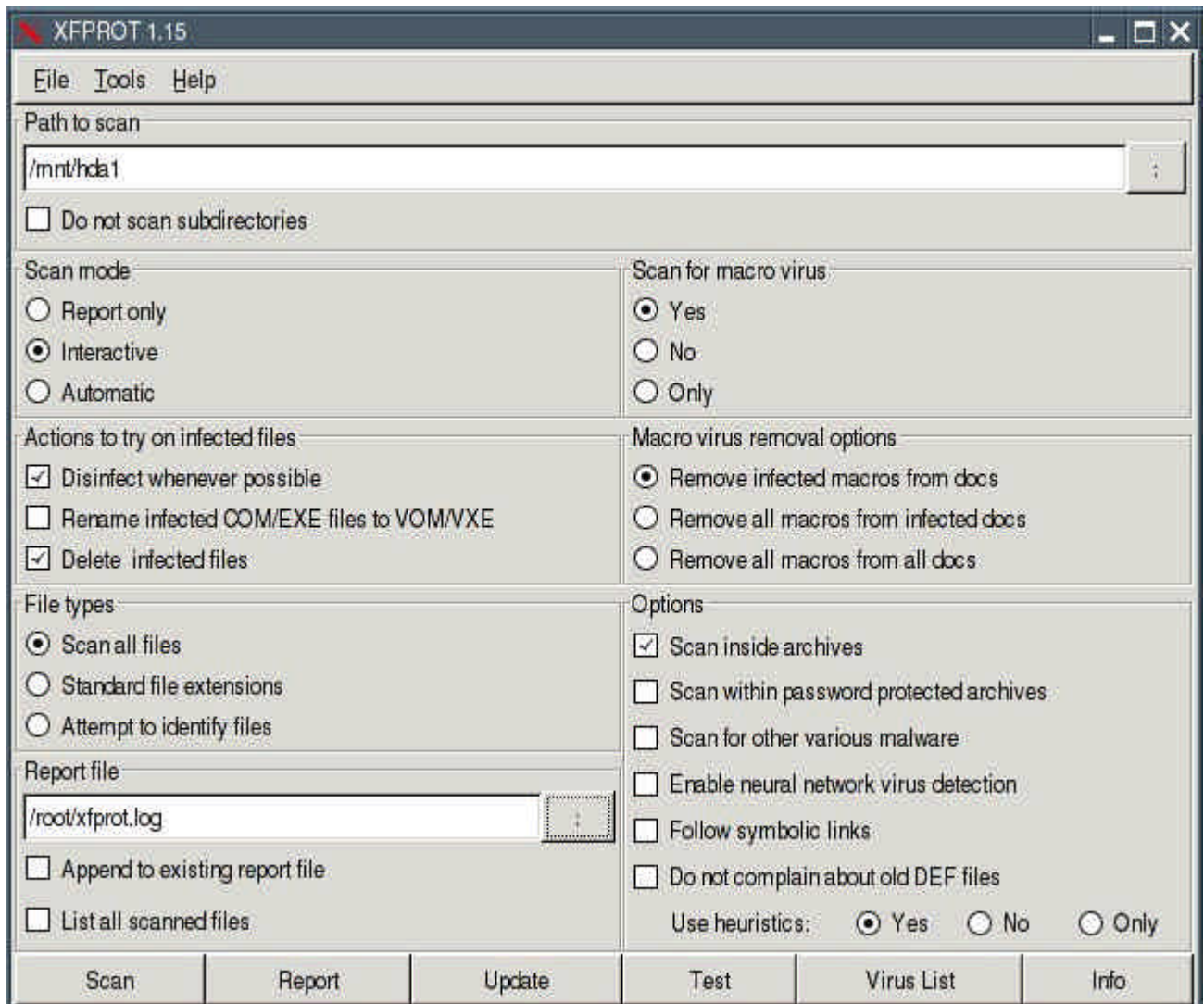
- You can test your firewall at the Web site [Shields Up!](#). Load the page and click the Proceed-button.

11.4 Virus scanner

If you want to scan your files or a Windows computer you can use F-Prot virus scanner. You can download the program from the [Forum](#). After you have downloaded and installed the program open a shell and enter the following command while you are still online.

- `/usr/local/bin/xfprot-gtk` or
- `/usr/local/xfprot/xfprot-gtk`

Now you can update the virus definitions. Then you can get offline. Mount your Windows-partition (mount `/mnt/hdax /mnt/devx`) and make the following settings in F-Prot:



- Path to scan: `/mnt/hdax`
- Scan mode: Interactive

- Report file: /root/xfprot.log

When the virus scan has finished you can find the log-file at /root/xfprot.log.

If you want to scan another Windows computer, you can remaster Puppy (see chapter 13). Boot the Windows computer from the remastered Puppy CD (boot-option puppy pfix=ram) and scan the PC as described above.

11.5 Intrusion detection

For further improvement of your security you should store a checksum (a fingerprint) for all files. At regular intervals, but in any case before a backup, you examine the checksums of your files. If the checksums do not agree, the file was changed or deleted.

In order to compute and store the checksums, you open a shell and enter the following commands:

- `md5sum /usr/bin/md5sum`
Create a checksum of the program md5sum. Write down the checksum.
- `mount /dev/hda4 /mnt/hda4`
Mount the harddrive with your files.
- `find /mnt/hda4 -type f -exec ls -ail {} \; \-exec md5sum {} \; > /root/check1.dat`
Create the file check1.dat with the checksums of all files.
- `md5sum /root/check1.dat`
Create a checksum of the file. Write down the checksum.

If you want to check, which files have been changed enter these commands:

- `md5sum /usr/bin/md5sum`
Create a checksum of the program md5sum. Compare the checksum with the checksum of step (1).
- `md5sum /root/check1.dat`
Create a checksum of the file /root/check1.dat. Compare the checksum with the checksum of step (3).
- `mount /dev/hda4 /mnt/hda4`
Mount the harddrive with your files.
- `find /mnt/hda4 -type f -exec ls -ail {} \; \-exec md5sum {} \; > /root/check2.dat`
Create the file check2.dat with the actual checksums of the files.
- `diff /root/check1.dat /root/check2.dat > /root/diff.txt`
Compare the two files check1.dat and check2.dat. The differences are written to the file diff.txt.
- Open the file /root/diff.txt and check, if you know about the changed files. If not think why these files have been changed.

- Delete the file /root/check1.dat
- Rename the file /root/check2.dat as /root/check1.dat.
- md5sum /root/check1.dat

Create a checksum of the new check1.dat-file. Write down the checksum.

11.6 Encrypt with bcrypt

You should encrypt very sensitive files with the program bcrypt. Bcrypt uses the secure Blowfish-algorithm.

Open a shell and enter:

- `bcrypt /MyDirectory/MyFile`

Then you are asked a password (at least eight characters long; you can abort bcrypt with "Ctrl" + "C"). Bcrypt encrypts your file and appends the extension bfe to the file. The original file is deleted automatically.

If you want to encrypt more than one file or a complete directory you should create an archive-file. Start the program "Menu | Utilities | Xarchive archiver". Afterwards you encrypt the archive-file.

Note that bcrypt deletes the original file automatically. You can't recover the file. If you don't want to delete the file start bcrypt with the option -r:

- `bcrypt -r /MyDirectory/MyFile`

If you want to decrypt the file start bcrypt again:

- `bcrypt /MyDirectory/MyEncryptedFile`

Then you enter your password.

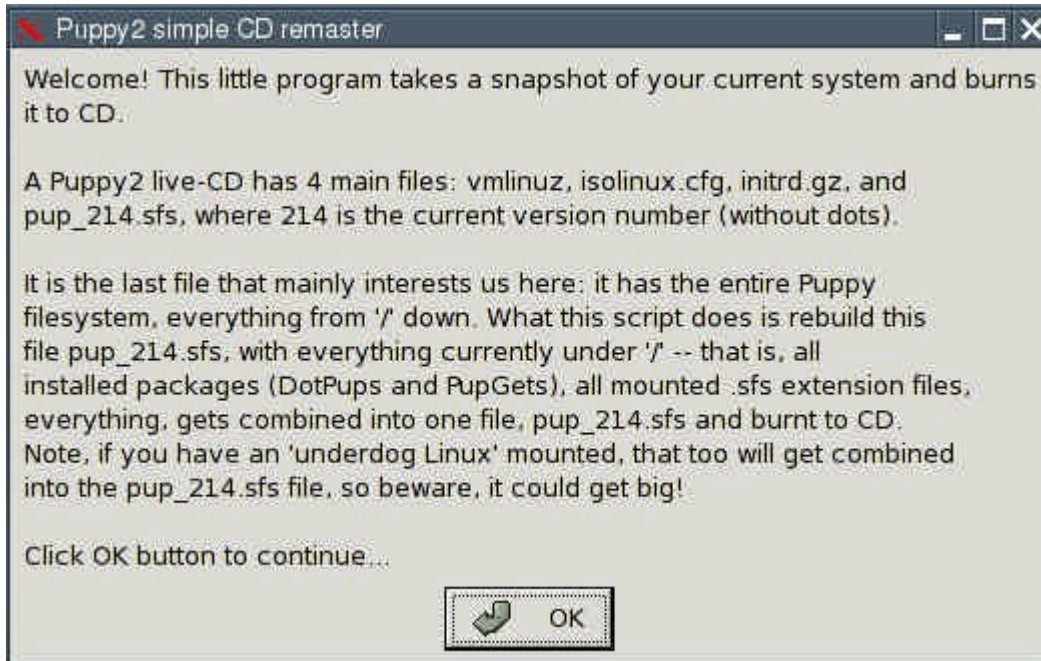
For further information see :

- [Homepage bcrypt](#)

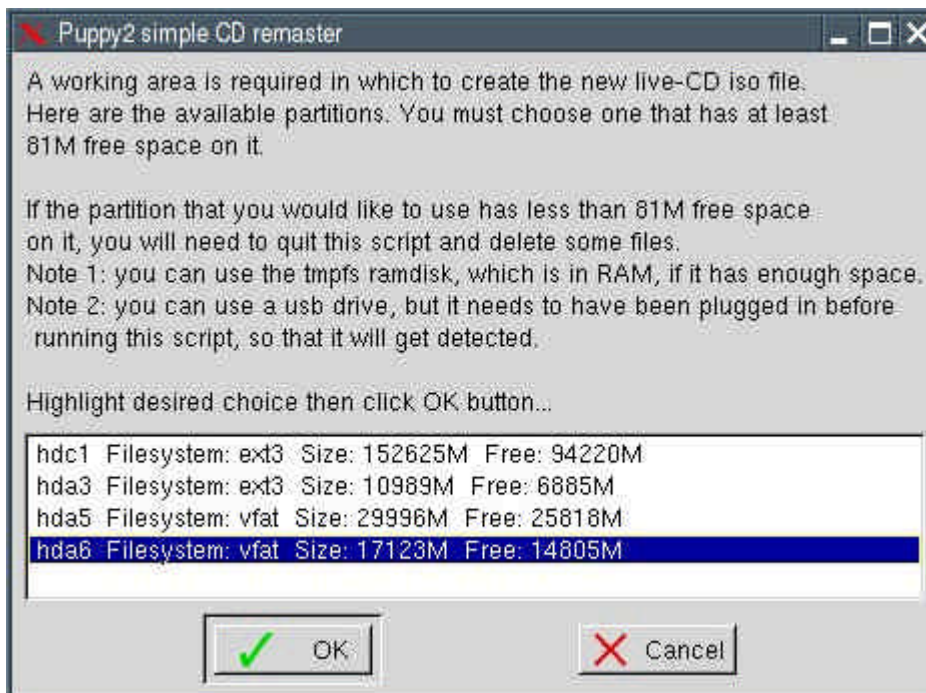
12. Make your own Puppy-CD

You can create your own Puppy-Linux with the following program.

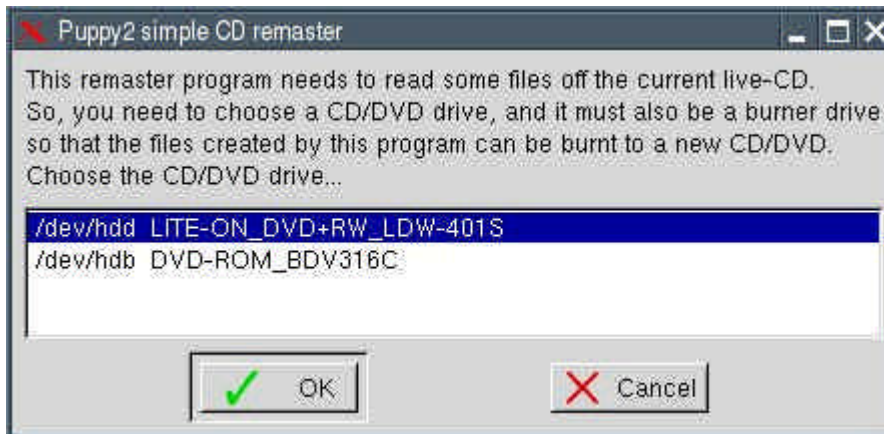
Start the program "Menu | Setup | Remaster Puppy live-CD":



Click on the OK-button.



Choose the partition, on which a temporary working directory should be made with the tabulator-keys. Then press the OK-button.



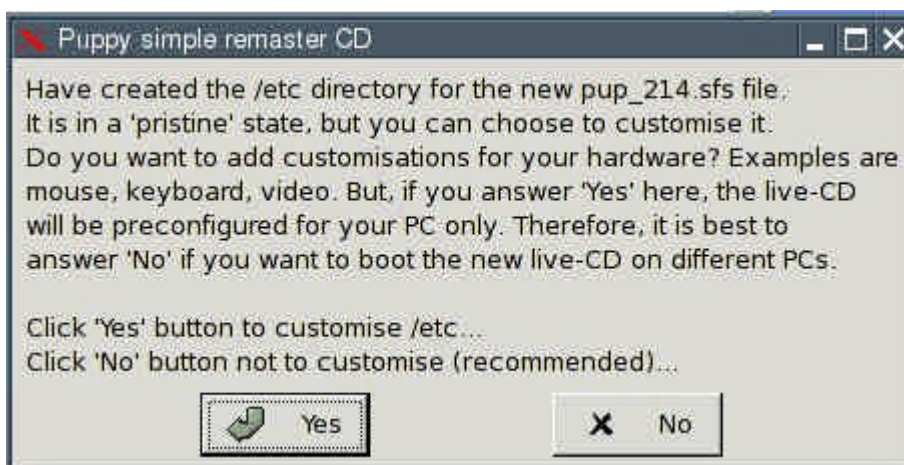
Choose your CD/DVD-burning device with the tabulator-keys. Then press the OK-button.



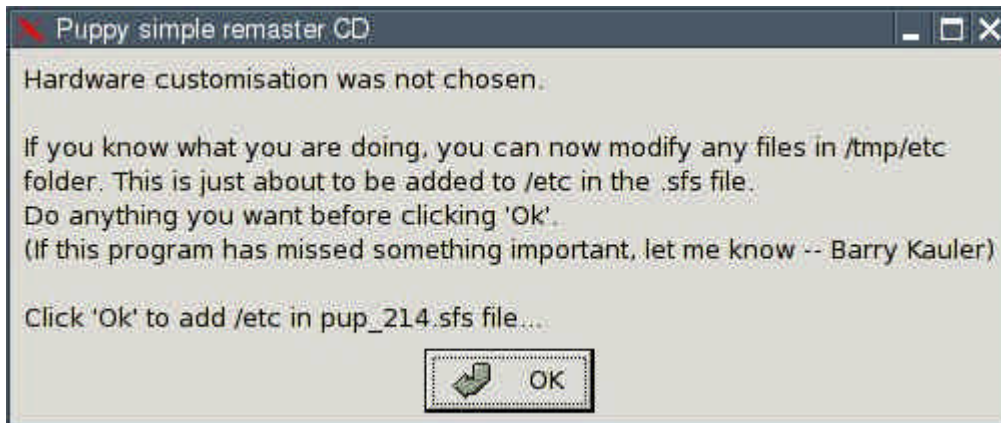
Insert the current Puppy-live-CD and press the OK-button.



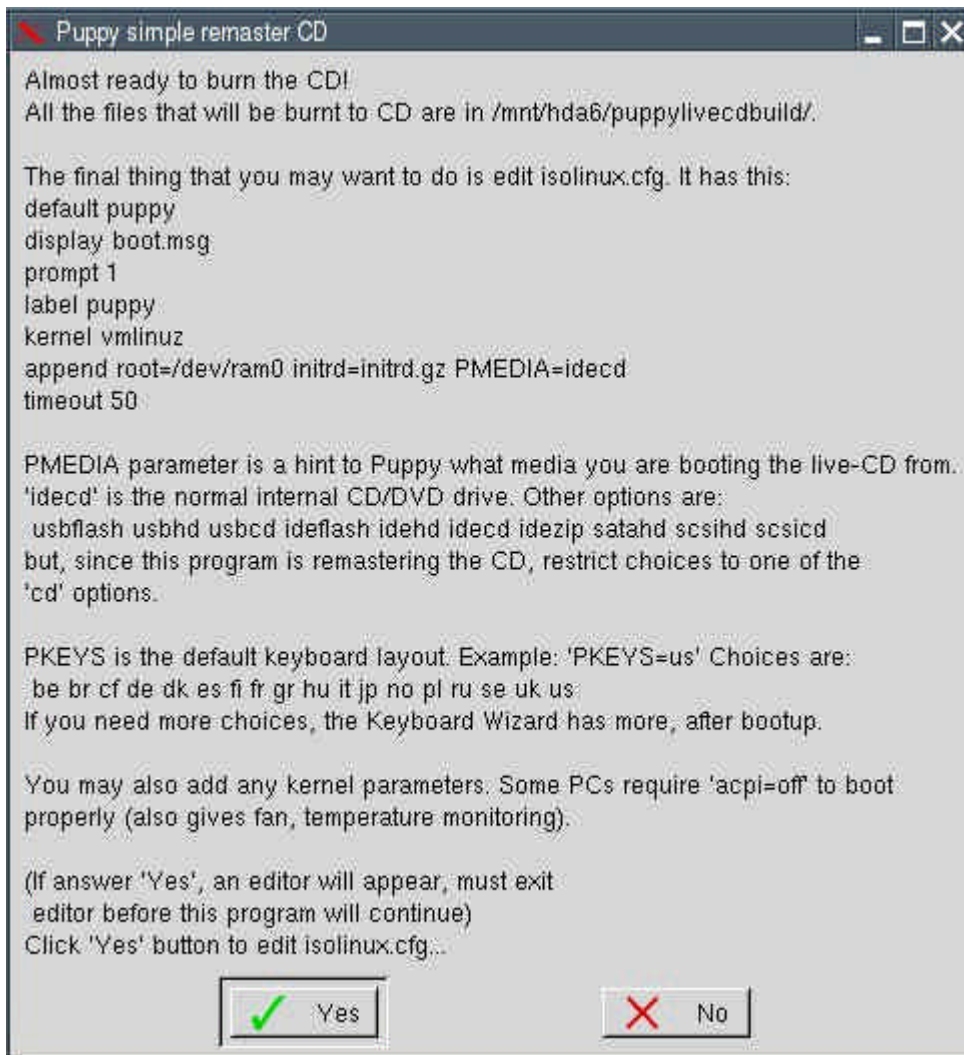
Click on the OK-button.



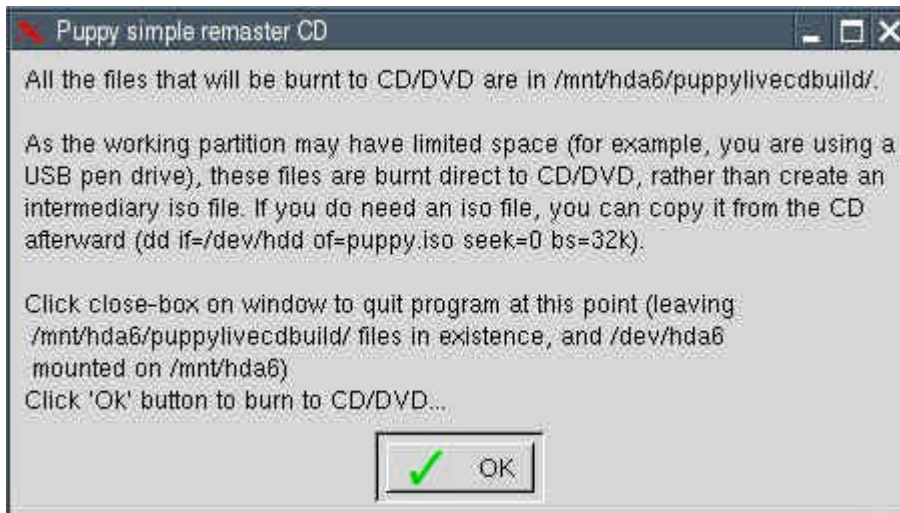
Click on the button "No".



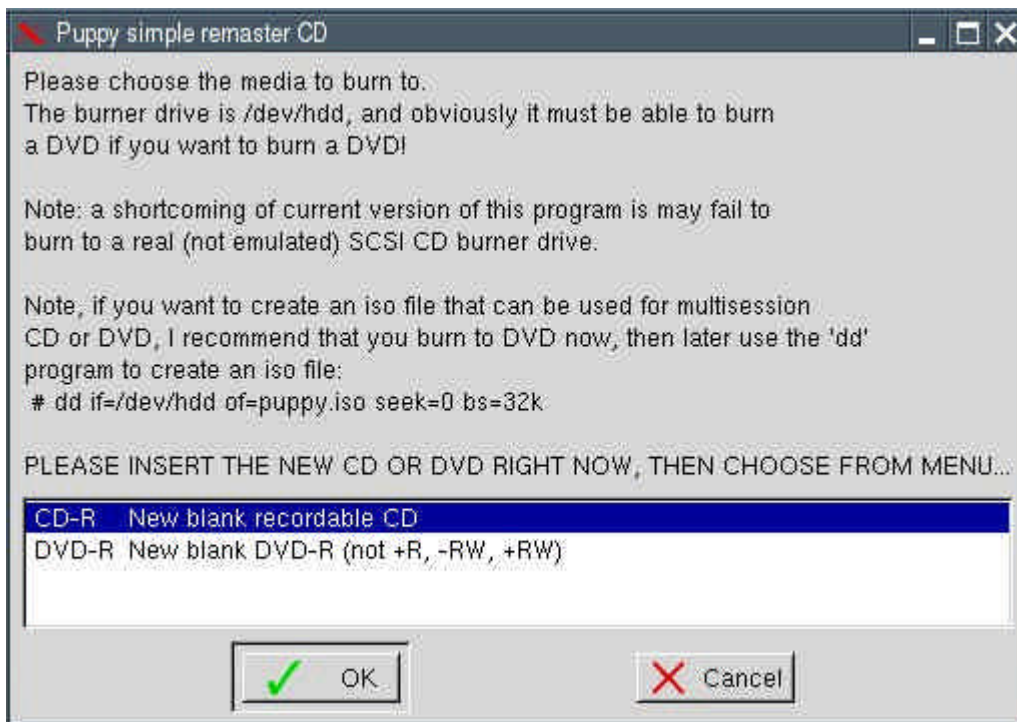
Click on the OK-button.



Click on the button "No".



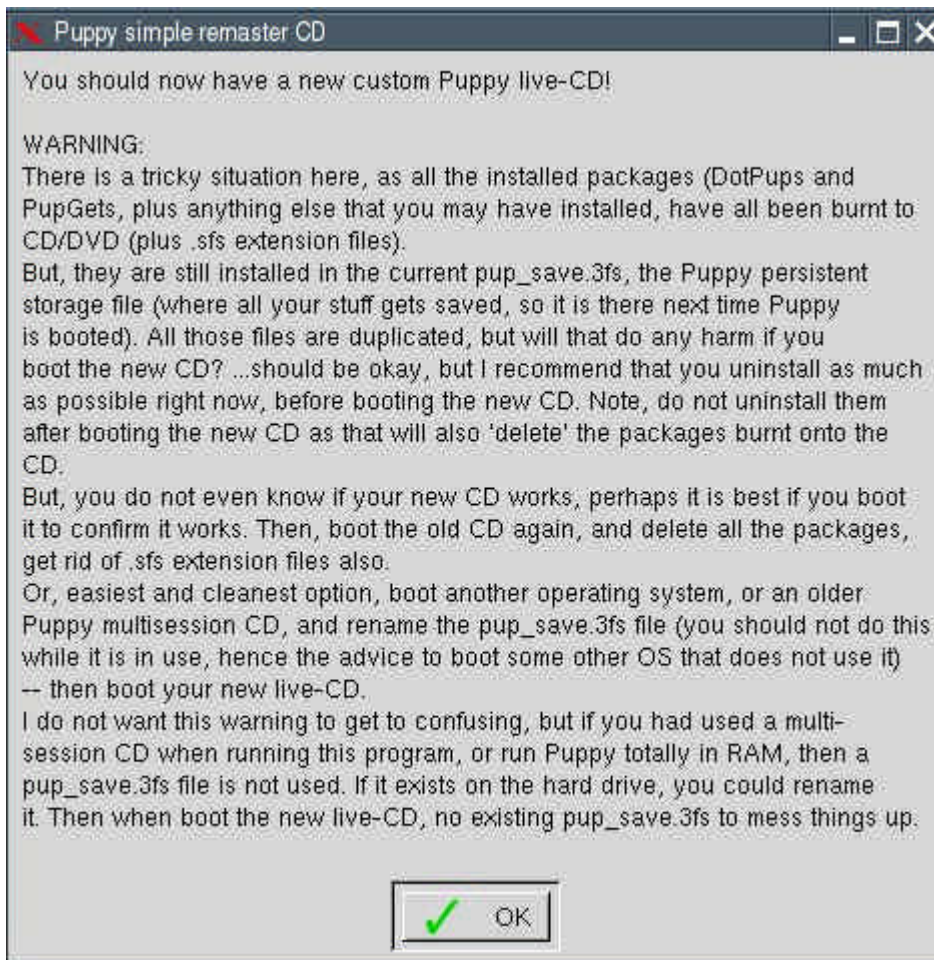
Click on the OK-button.



Take the live-CD out of the CD/DVD-burning device and insert a new CD-ROM or DVD. Choose if you want to create a CD or DVD with the tabulatorkeys. Then click on the OK-button.

```
Puppy simple remaster CD
ATIP start of lead in: -12508 (97:15/17)
ATIP start of lead out: 359845 (79:59/70)
Disk type: Short strategy type (Phthalocyanine or similar)
Manuf. index: 22
Manufacturer: Ritek Co.
cdrecord: WARNING: Total disk size unknown. Data may not fit on disk.
Forcespeed is ON.
Turning forcespeed off
Starting to write CD/DVD at speed 8 in real TAO mode for multi session.
Last chance to quit, starting real write 0 seconds. Operation starts.
Waiting for reader process to fill input buffer ... input buffer ready.
BURN-Free is OFF.
Performing OPC...
Starting new track at sector: 0
Track 01: 66 MB written (fifo 100%) [buf 100%] 8.2x.
Track 01: writing 30 KB of pad data.
Track 01: Total bytes read/written: 70033408/70064128 (34211 sectors).
Writing time: 66.891s
Min drive buffer fill was 100%
Fixating...
Fixating time: 34.965s
cdrecord: fifo had 1105 puts and 1105 gets.
cdrecord: fifo was 0 times empty and 1022 times full, min fill was 79%.
Finished. Press ENTER key to continue: █
```

Your new Puppy-CD/DVD will now be created. When it has finished, press the Return-key.



Click on the OK-button. Your Puppy-live-CD is now ready.

13. Tips and tricks

13.1. Windows-programs und corresponding Puppy-Linux-programs

Windows	Puppy-Linux
Windows Explorer	ROX
Word	Abiword, OpenOffice Write
Excel	Gnumeric, OpenOffice Calc
PowerPoint	OpenOffice Impress
Notepad	Editor Geany
Internet Explorer	SeaMonkey Browser
Outlook	SeaMonkey Mail
Frontpage	Bluefish
Photoshop, Paintshop	Gimp
mp3-Player	Xmms
DVD-Player	Gxine

13.2 Upper and lower case

Linux always differentiates between upper and lower case. The two files MyFile.txt and myfile.txt are different file.

13.3 Special characters

Do not use special characters except for minus (-) and underline (_) for filenames or directory-names. Don't use the space-character. Use the characters A-Z, a-z, 0-9, -, _ only.

13.4 How to move files with ROX

If you left-click on a file and pull it to another directory the file is copied. If you press the shift-key at the same time, the file is moved.

Further information about [ROX](#)

13.5 The contextmenu of ROX

To use the contextmenu of ROX right-click on a file or directory.

13.6 Copy and paste in the shell rxvt

Copy = left mouse-click

Paste = middle mouse-click

13.7 Automatic completion in the shell rxvt

You do not have to type the entire path or filename at the shell. It is enough to type the first letters and then press the tabulator-key. The shell completes the directory-name or filename.