

## 82- Creating Live CDs

### • Modifying the Knoppix Live CD Version 3.3

This explanation shows which steps to do to modify the content of a Knoppix Live CD.

1. Create 2 partitions in ext3 of about 3.5GB and 2.5GB, and one swap of 750MB.  
The swap + RAM should = 1GB
2. Boot Knoppix from live CD and start a terminal as root : `sudo su -`
3. Install Knoppix on the 2.5GB Partition(eg. `/dev/hda2`) using the scripts:  
`knx-hdinstall`
4. Reboot the newly installed Knoppix on Hard Drive
5. Mount the 3.5GB partition (eg. on `/mnt/hda1`)and create the following directories:  
`mkdir /mnt/hda1 (if not already existing)`  
`mount -o rw /dev/hda2 /mnt/hda1`  
`cd /mnt/hda1/`  
`mkdir -p custom/KNOPPIX_CD`
6. Mount the Knoppix Live CD and copy the Boot files into the `/mnt/hda1/custom`:  
`mount /cdrom`  
`cd /cdrom`  
`tar cpf - . --exclude ./KNOPPIX/KNOPPIX \`  
`| (cd /mnt/hda1/custom/KNOPPIX_CD ; tar xpf -)`
7. Make the changes into the current Knoppix (installed on HD).
  1. Get another list of packages from a Minimal Knoppix from the `contrib` directory of many Knoppix mirror web sites. The list is called `Packages.txt`.
  2. Get the same list from the current Live CD and compare them using the `diff`. You'll find a lot of programs that you can take out with the command:  
`dpkg --purge packagename`
  3. After that to get an idea of what could be taken out to make more space, produce a list of files with their sizes of the current Knoppix using the command:  
`dpkg-query -W --showformat='${Installed-Size} ${Package}\n' \`  
`| sort -n > CPackages.txt`
8. Reboot the Knoppix Live CD and mount both the partitions:  
`mount /dev/hda1 /mnt/hda1 -o rw`  
`mount /dev/hda2 /mnt/hda2 -o rw`
9. Clean-up the unwanted files from the installed Knoppix on HD like:  
`rm /mnt/hda2/home/knoppix/.bash_history, etc.`
10. Create a compressed image file of the new Knoppix root partition (`hda2`) and save it in the other partition(`hda1`):  
`mkisofs -R -L /mnt/hda2 | create_compressed_fs - 65536 \`  
`> /mnt/hda1/custom/KNOPPIX_CD/KNOPPIX/KNOPPIX`  
**NOTE:** At this point some customization of the boot message(`boot .msg`) or the boot script(`linuxrc`) are possible by following the steps on the next page before continuing to step 11.
11. Create a full image of the new Live CD nad save it in `/mnt/hda1/custom`:  
`cd /mnt/hda1/custom`  
`mkisofs -J -T -v -r -c KNOPPIX/boot.cat \`  
`-b KNOPPIX/boot.img -o knoppix2.iso KNOPPIX_CD`
12. Reboot a system that can burn a CD, mount `hda1` and burn the file `knoppix2.iso`  
`cdrecord -v dev=0,0 knoppix2 .iso`  
**DONE!!!!** You can now boot this CD. It is recommended to use a rewritable CD in case things don't go the way we expect.

**Special customization before creating the CD image file(before step 11).**• Create your own Boot-Screen image

- Create a temporary directory and copy the original `boot.img` into it.
 

```
mkdir -p /mnt/hda1/custom/bootscreen/unpacked
cd /mnt/hda1/custom/bootscreen
cp ../KNOPPIX_CD/KNOPPIX/boot.img .
```
- Mount the file `boot.img` using `loop`.
 

```
mount -o loop boot.img unpacked
```
- Copy the logo image from the mounted image file into the current directory
 

```
cp unpacked/logo.16 .
```
- Convert the logo file from an `lss16` format into a PPM to be able to edit it with Gimp:
 

```
lss16toppm <logo.16 >logo16.ppm
```
- Edit the logo using GIMP and save it as a BMP file.
- Convert the BMP file back to the original `lss16` format:
 

```
bmptoppm <logo16.bmp >logo16.ppm
ppmtolss16 <logo16.ppm >logo.16
```
- Replace the original logo file with the new one.
 

```
cp logo.16 unpacked
```
- NOTE: If you want to Change the message given on boot screen (`boot.msg`) just edit the file `unpacked/boot.msg`.  
IMPORTANT: Leave the first line untouched!.....the rest can be changed.

- At this point some other customizations can also be done before creating the CD image,(step 11 on previous page) like Changing the booting script

\_If you don't want to make any other changes then issue the command:

```
umount unpacked ; cp boot.img /mnt/hda1/custom/KNOPPIX_CD/KNOPPIX/
```

and then continue with the step 11 on previous page.

- If you do want to make changes of the booting script then do the following steps:

- Create a temporary directory for mounting and editing the boot script.
 

```
mkdir -p /mnt/hda2/custom/bootscrip/unpacked
```
  - Change directory
 

```
cd /mnt/hda2/custom/bootscrip
```
  - Make a copy of the file `miniroot.gz` into the current directory.
 

```
cp ../bootscreen/unpacked/miniroot.gz .
```
  - Unpack the file `miniroot.gz`.
 

```
gunzip miniroot.gz
```
  - Mount the `miniroot` file in loop mode
 

```
mount -o loop miniroot unpacked
```
  - Edit the content of the script `linuxrc` and make the desired changes.
 

```
vi unpacked/linuxrc
```
  - When file is saved, unmount the `miniroot` file
 

```
umount unpacked
```
  - Repack the `miniroot` file:
 

```
gzip -9 miniroot
```
  - Replace the original `miniroot.gz`

```
cp miniroot.gz ../bootscreen/unpacked/
```
  - Unmount the `boot.img`

```
cd ../bootscreen
umount unpacked
```
  - Replace the original `boot.img`

```
cp boot.img ../KNOPPIX_CD/KNOPPIX/
```
- and then continue with the step 11 on previous page.

- **Extra Notes:**

- When you have created a boot floppy (via the knoppix menu), you can then change the `linuxrc` boot script of this floppy.
- Knoppix can also be installed on a Windows partition and be booted by a floppy.
  - Start Windows and insert the Live CD
  - Using explorer, copy the whole content of the CD into `C:\KNOPPIX` dir.
  - Insert a formatted floppy in drive and doubleclick on  
`C:\KNOPPIX\mkfloppy.bat`
  - Reboot with the floppy and Knoppix runs from the windows partition.