Xplora-Knoppix

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What is Knoppix?

Knoppix is a live distribution of Linux. The term **live distribution** means that the operating system Linux is running live from the DVD instead of being installed on the hard disk of the computer. The advantages of the concept are, that you get a preconfigured self booting DVD with a lot of software installed and ready to run without configuration.

What is Xplora-Knoppix?

Xplora-Knoppix is an adapted version of Knoppix meant to help science teachers giving good science lessons. Xplora will support the software on this DVD by giving examples of how to use it in school on their web server. There is also educational material on the DVD, which supports the use of ICT in the science laboratory and classroom.

What about the educational material?

Good science teaching means having good educational material. Independent from the Linux operating system starting when you boot from DVD, Xplora-Knoppix contains educational material you can find in the Internet and material from Xplora's project partners. This material is given in a way, that you can access it without booting from the DVD. Depending on the material, you need to have a PDF document reader, a web browser, JAVA and a FLASH player installed.

Where and how can I get it?

There are several ways to get a copy of our DVD:

1. Download the ISO image from one of these locations:
   ftp://ftp.tu-chemnitz.de/pub/linux/Knoppix-Xplora-DVD/
   ftp://explora:download@www.alfelearning.org/
   As the size of the file is about 3GB, it will take some time and the download costs might exceed that of ordering a DVD by snail mail.

2. You can order a copy of the DVD at our distributor Info-Linux for mainly materials cost plus shipping and handling: http://www.linux-cd.info/

What else should I know?

As Knoppix is Open Source and the material on it is at least free to copy, you can make this DVD available on your web server, copy it as much as you like and give it away to your friends, colleagues or students. We would like to see a large number of copies of Xplora-Knoppix being used around the world.

Guarantees?

None! We don't guarantee anything except that we did our best to make a useful DVD for science teachers. ***Specially we do not take any responsibility about any damage you or someone else might cause by inappropriately using the DVD.*** The DVD is configured to have only read access to your hard disk. So you should not fear loss of data. More important: Nothing is installed on your hard disk.

How do I start the DVD?

1. Make sure that your DVD drive is the first boot device (Check the BIOS). If you are in doubt ask your computer store or a friend.
2. Switch on your computer and immediately insert the DVD into your DVD drive.
3. If the computer does not recognize your DVD as bootable, you might have too slow at step 2. Just reboot the computer and wait for the next step to come. If that does not happen again, the DVD is not recognized as a bootable device. This might be caused by your computer or by the DVD. In case you don't know, ask your computer store or a friend.
4. The Xplora logo is popping up and a command line appears.
5. At the command line, issue the command **knoppix lang=de** (for German users), **knoppix lang=fr** (for French users), **knoppix lang=us** (for English users). With this command you set the keyboard structure and the language for the menus. Just doing nothing issues the command **knoppix lang=us** after some minutes.
6. The hardware detection starts.
    a. The hardware detection ends successful. In this case you are on a KDE desktop. If you have a network card in your computer, the DVD tried to find a DHCP server and if it succeeded, you are connected to your network with a valid IP address. In case you have a configured Internet connection (for example by a DSL router in your network) you can immediately starting to surf the Internet.
    b. The computer hangs. Knoppix is known for an excellent hardware detection mechanism, but sometimes special hardware is causing problems. Also a non responding DHCP server might cause an unexpected stop. There are some pathways out of the problem. Generally, pressing F3 at the boot prompt (step 4) gives an overview of optional parameters at boot time in order to make the DVD boot on problematic hardware. Below there is a selection of problems and solutions.

Problems and solutions

Symptom	Problem	Solution
The computer hangs looking for a DHCP server.	No DHCP server available or network broken.	Switch off the search for DHCP by adding the parameter **nodhcp**. (e.g.: knoppix lang=us nodhcp) In this case the whole hardware detection is running but the search for an DHCP server is excluded.
Strange noise during booting. Errors like "cloop: ...".	Defect DVD.	Run **knoppix testcd** from the command line. if it shows a defective DVD, order a replacement or try to burn a new DVD.
The computer hangs with any hardware detection.	The corresponding hardware is not yet detected by the Knoppix detection mechanism.	Run **knoppix lang=XX noYYY** from the command line. XX is the language you like to work with, YYY is the hardware where the detection mechanism hangs. (e.g.: knoppix lang=fr nodma)
You dont' know why and where the computer hangs.	Something you cannot see stops the computer.	Run **knoppix failsafe** from the command line. This switches off any hardware detection.

Working with Xplora-Knoppix

Mounting an USB stick

We propose that you do not save any data on your hard disk. This saves you from unintentionally destroying your system. For this reason the hard disks of your computer are only accessible for reading. You cannot save anything on your hard disks. To save data we encourage you to use a cheap USB memory stick. When Xplora-Knoppix is running, insert the USB stick. An icon for the USB stick pops up on the desktop. With a right mouse click on icon you can trigger an action to mount the USB stick (figure 1).

Figure 1: Right click opens the context menu to mount the USB stick
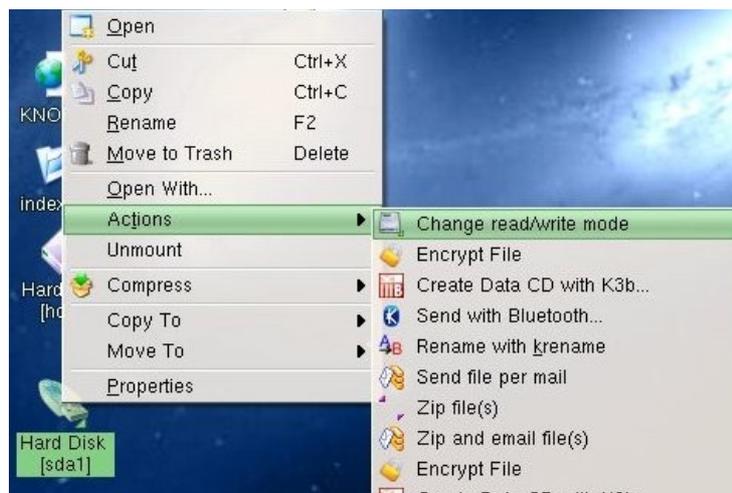

Figure 2: A second right click enables the mounted USB stick to be writeable

After mounting the USB stick you can make it writeable. Again right-click on the icon and select the corresponding action (figure 2). From now on you can write on the USB stick. After saving documents to it, you can move the saved documents to another computer with a different operating system and use it there.

Launch software

You may launch software by either using the launch bar (figure 3) or by a command in a command line (figure 4).

Figure 3: A click on the K-gear starts the launch bar

In the first case you simply browse through the menu and try to find the application you need.

In the second case you should know the name of the application and directly call it.

Another comfortable way to launch frequently used programs is to put them on the desktop and launch them as usual by a mouse click.

Figure 4: The command line launches a program, if the name is known

Which software is there?

There is software for nearly all purpose of science teaching. The following table gives only a little overview. It is highly recommended to follow the Xplora portal in order to find articles about the use of software on this DVD in the classroom.

Subject	Topic	Programs
Mathematics	Dynamic geometry, Computer Algebra System, simulation, general application	GEONExT, GeoGebra, Maxima, JAVA applets, OpenOffice.org
Physics	Simulations, lab reporting, experimental setup drawing, data presentation	XYZet, JAVA applets, OpemOffice.org, LyX, xfig, grace
Chemistry	Molecular viewer, Molecular orbital calculations, formula drawing, simulation	Jmol, ghemical, xdrawchem, virtual laboratory
Biology	Biomolecules	Jmol, set of molecules
Computer science	Computer languages, development environments	Most computer languages are present. Too much to cite here.
General	Basic understanding and learning in science	gcompris

Where can I find the material from the Internet and from Xplora partners?

On the desktop there is a folder named **Xplora.** There are two ways to access its content:

1) Click on the folder and the Konqueror browser opens the index.html file in it (figure 5). There you find about 2GB of data and software ready to use by a mouse click on the link. Normally the first entry leads to the location of the source in the Internet. The second link either links to the email of the author (if available) or to the original material on the DVD. All science topics are covered.

2) It is a good idea to start the Firefox browser and open the file "/cdrom/Software/index.html". In this case you avoid problems with flash.

Call for materials

May be you want to see your material on an internationally distributed DVD? Just send an email to Karl Sarnow (karl.sarnow@eun.org) and tell us about your material. We will review your material and if it fits into our project we will include it withour cost for you. You will obviously receive a free copy of the DVD. Please ask for the deadlines of the next edition of Xplora-Knoppix.
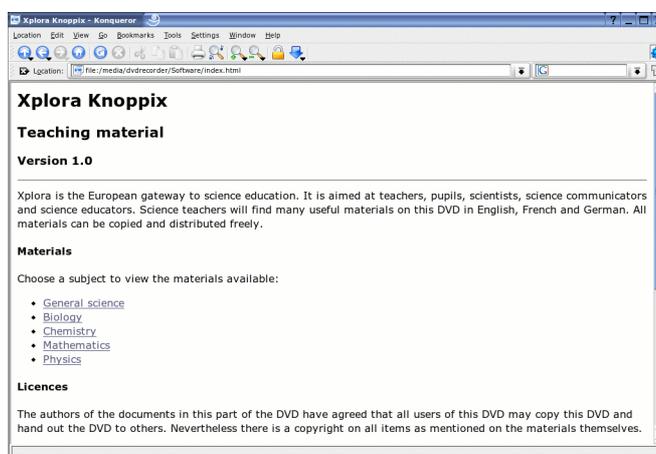
http://www.xplora.org

Figure 5: The materials included on the DVD are reachable via a click on the Xplora folder on the desktop

Problems, Question, Report about best practice

Xplora has setup a mailing list (xplora-dvd@eun.org) where users can raise questions in case of problems or report about their use in the classroom. There is also a forum on Xplora available, where this discussion will go on. Users of the DVD are invited to join this Xplora community and the mailing list.