Mandriva Linux 2006

DrakXTools User Manual

Mandriva

http://www.mandriva.com

Mandriva Linux 2006: DrakXTools User Manual
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About the Making of this Manual

This manual is written and maintained by NeoDoc (`http://www.neodoc.biz`). Translations are ensured by NeoDoc, Mandriva and other translators.
This document was written in DocBook XML. The set of files involved were managed using the Borges Collaborative Content Creation System (C3S) (`http://sourceforge.net/projects/borges-dms`). The XML source files were processed by xsltproc, and `jadetex` (for the electronic version) using a customized version of Norman Walsh's stylesheets. Screen shots were taken using xwd or GIMP and converted with `convert` (from the ImageMagick package). All these programs are free software and all of them are available in your Mandriva Linux distribution.

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Preface

1. About Mandriva Linux

Mandriva Linux is a GNU/Linux distribution supported by Mandriva S.A. which was born on the Internet in 1998. Its main goal was and still is to provide an easy-to-use and friendly GNU/Linux system. Mandriva's two pillars are open source and collaborative work.

> On April 7th 2005 the Mandrakesoft company changed its name to Mandriva to reflect its merger with Brazil-based Conectiva. Its core product, Mandrakelinux, became Mandriva Linux.

1.1. Contacting the Mandriva Linux Community

The following are various Internet links pointing you to the most important Mandriva Linux-related sources. If you wish to know more about the Mandriva company, connect to our web site (`http://www.mandriva.com/`). You can also check out the Mandriva Linux distribution web site (`http://www.mandrivalinux.com/`) and all its derivatives.

Mandriva Expert (`http://www.mandrivaexpert.com/`) is Mandriva's support platform. It offers a new experience based on trust and the pleasure of rewarding others for their contributions.

We also invite you to subscribe to the various mailing lists (`http://www.mandriva.com/community/resources/newsgroups`) where the Mandriva Linux community demonstrates its vivacity and keenness.

Please also remember to connect to our security page (`http://www.mandriva.com/security`). It gathers all security-related material about Mandriva Linux distributions. You will find security and bug advisories, as well as kernel update procedures, the different security-oriented mailing lists which you can join, and Mandriva Online (`https://online.mandriva.com/`). This page is a must for any server administrator or user concerned about security.

1.2. Join the Club!

Mandriva offers a wide range of advantages through its Mandriva Club (`http://club.mandriva.com`):

- download commercial software normally only available in retail packs, such as special hardware drivers, commercial applications, freeware, and demo versions;
- vote for and propose new software through a volunteer-run RPM voting system;
- access more than 50,000 RPM packages for all Mandriva Linux distributions;
- obtain discounts for products and services on Mandriva Store (`http://store.mandriva.com`);
- access a better mirror list, exclusive to Club members;
- read multilingual forums and articles.
- access Mandriva's Knowledge Base (`http://club.mandriva.com/xwiki/bin/view/KB/`), a wiki-based site which holds documentation on many subjects such as administration, connectivity, troubleshooting, and more;
- chat with the Mandriva Linux developers on the Club Chat (`https://www.mandrivaclub.com/user.php?op=clubchat`);
- enhance your GNU/Linux knowledge through Mandriva's e-training lessons (`http://etraining.mandriva.com/`).

By financing Mandriva through the Mandriva Club you will directly enhance the Mandriva Linux distribution and help us provide the best possible GNU/Linux desktop to our users.

1.3. Subscribing to Mandriva Online

Mandriva offers a very convenient way to keep your system automatically up-to-date, keeping away bugs and fixing security holes. Visit the Mandriva Online Web site (`https://online.mandriva.com//`) to learn more about this service.

1.4. Purchasing Mandriva Products

Mandriva Linux users may purchase products on-line through the Mandriva Store (`http://store.mandriva.com/`). You will not only find Mandriva Linux software, operating systems and "live" boot CDs (such as Move), but also special subscription offers, support, third-party software and licenses, documentation, GNU/Linux-related books, as well as other Mandriva goodies.

1.5. Contributing to Mandriva Linux

The skills of the many talented folks who use Mandriva Linux can be very useful in the making of the Mandriva Linux system:

- **Packaging.** A GNU/Linux system is mainly made of programs picked up on the Internet. They have to be packaged in order to work together.
- **Programming.** There are many, many projects directly supported by Mandriva: find the one which most appeals to you and offer your help to the main developer(s).
- **Internationalization.** You can help us translate web pages, programs and their respective documentation.

Consult the development projects (`http://qa.mandriva.com/`) page to learn more about how you can contribute to the evolution of Mandriva Linux.

2. MCC's Components

The Mandriva Linux Control Center (MCC) enables the system administrator to configure the hardware and the services used by all users in a friendly way.

Access the Mandriva Linux Control Center through the main menu (System+Configuration→Configure Your Computer).

> Some of the Mandriva Linux Control Center components are also available from the command line in text mode by running `drakconf.`
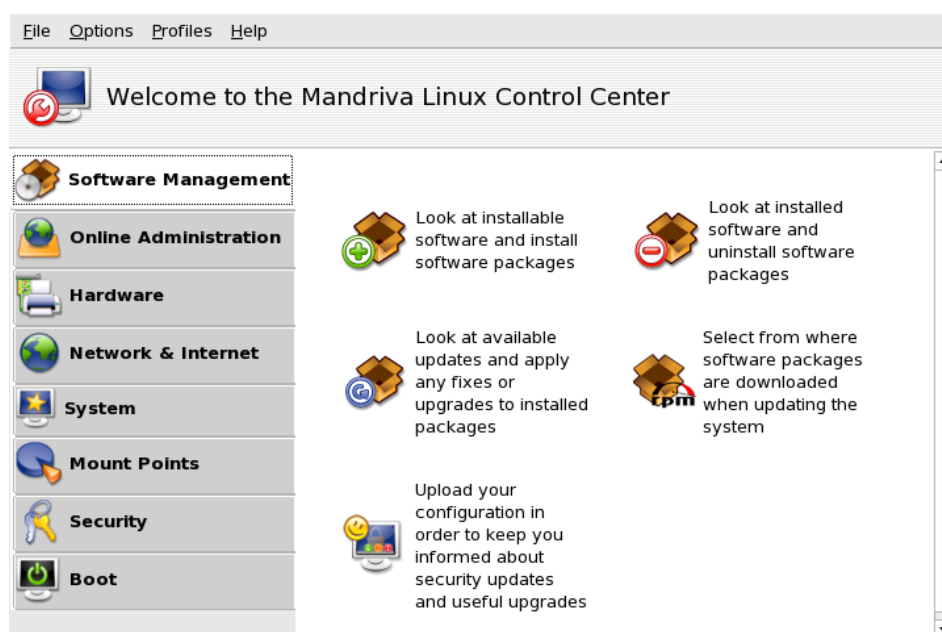
Figure 1. The Control Center's Main Window

Here are some of the available menu entries:

- **Options→Display Logs.** When activated this option displays a Tools Logs window. It shows all system modifications made by the configuration tools launched from within the Mandriva Linux Control Center.

- **Options→Expert mode.** Gives you access to some of the more advanced tools, which are shown in the table below.

- **Profiles.** This menu gives you access to the configuration profiles features. We cover this topic in *Managing Configuration Profiles*, page 6.

- **Help→Help.** Opens the help browser which displays documentation about the active configuration tool.

- **Help→Report Bug.** Allows you to report a bug to the development team. See *The Drakbug Reporting Tool*, page 8.

The tools are sorted into categories. The following table lists them all and refers to the corresponding sections of this manual.

Software Management	"*Package Management through Rpmdrake*", page 9
	Configuration Uploader: allows you to upload your configuration to the Mandriva Online facility in order to benefit from available software updates. Available only in Mandriva Linux Control Center's expert mode.
Hardware	*Configuring your Hardware*, page 21
	Controlling the Graphical Configuration, page 22
	Setting up a TV Card with DrakxTV, page 26
	Changing your Keyboard Layout, page 27
	Changing your Mouse, page 28
	Configuring Printers with PrinterDrake, page 28
	Installing and Using Scanners, page 39
	Setting up your UPS, page 45
Network & Internet	*Network and Internet Connection Management*, page 47
	DrakProxy: enables you to configure a proxy to access the Internet.
	Internet Connection Sharing, page 54
System	*Customizing your Menus with MenuDrake*, page 57

	Display manager chooser: allows you to choose the X11 display manager for users who graphically log onto the machine. Basically, all display managers offer the same features, it's just a question of taste.
	Configuring Start-Up Services, page 60
	Managing Available Fonts on your System with DrakFont, page 61
	Setting your Machine's Date and Time, page 62
	Monitoring System Activity and Status, page 63
	Console: simply opens a terminal to directly enter commands with the administrator account (root).
	Managing Users and Groups, page 67
	Backing Up and Restoring your Files, page 69
	DrakAuth enables you to select the authentication mode to be used to authenticate users on your system. Available only in Mandriva Linux Control Center's expert mode.
Mount Points	*Managing your Hard Drive Partitions with DiskDrake*, page 77
	Managing Removable Devices, page 80
	Importing Remote NFS Directories, page 83
	Importing Remote SMB Directories, page 81
	Setting up WebDAV Mount Points, page 84. This utility allows you to mount remote WebDAV directories.
	Allowing Users to Share Folders, page 83
Security	*Securing your Machine through DrakSec*, page 87. Available only in Mandriva Linux Control Center's expert mode.
	Controlling File Permissions with DrakPerm, page 88. Available only in Mandriva Linux Control Center's expert mode.
	Securing your Internet Access via DrakFirewall, page 90
Boot	*Configuring the Login Mode*, page 93
	Changing your Boot-up Configuration, page 93
	Customizing your Boot Theme, page 94

Table 1. Overview of Graphical Tools

Additionally, the Online Administration category only appears if the rfbdrake package is installed. This tool allows you to take control of a remote host (Linux/UNIX®, Windows®). We cover the usage Rfbdrake in "*Controlling a Remote Machine*", page 17.

Some more categories appear if the drakwizard package is installed. The documentation for those wizards is available ondisk as well as in the *Server Administration Guide*. Those wizards enable you to do basic configuration of common LAN services such as web, FTP, mail and database servers.

3. Note from the Editor

In the open-source philosophy, contributors are always welcomed! Updating the Mandriva Linux documentation pool is quite a task. You could provide help in many different ways. In fact, the documentation team is constantly looking for talented volunteers to help us out accomplish the following tasks:

- writing or updating;
- translating;

- copy editing;
- XML/XSLT programming.

If you have a lot of time, you can write or update a whole chapter; if you speak a foreign language, you can help us translate our manuals; if you have ideas on how to improve the content, let us know; if you have programming skills and would like to help us enhance the Borges Collaborative Content Creation System (C3S) (`http://sourceforge.net/projects/borges-dms`), join in. And don't hesitate to contact us if you find any mistakes in the documentation so we can correct them!

For any information about the Mandriva Linux documentation project, please contact the documentation administrator (`mailto:documentation@mandriva.com`) or visit the Mandriva Linux Documentation Project Pages (`http://qa.mandriva.com/twiki/bin/view/Main/DocumentationTask/`).

> Please note that since June 2004 the Mandriva Linux documentation and the development of Borges is handled by NeoDoc (`http://www.neodoc.biz`).

4. Conventions Used in this Book

4.1. Typing Conventions

In order to clearly differentiate special words from the text flow, we use different renderings. The following table shows examples of each special word or group of words with its actual rendering, as well as its significance.

Formatted Example	Meaning
inode	Used to emphasize a technical term.
`ls -lta`	Used for commands and their arguments. (see *Commands Synopsis*, page 6).
`a_file`	Used for file names. It might also be used for RPM package names.
ls(1)	Reference to a `man` page. To read the page, simply type `man 1 ls`, in a command line.
`$ ls *.pid`	Formatting used for text snapshots of what you may see on your screen including computer interactions, program listings, etc.
`localhost`	Literal data which does not generally fit in any of the previously defined categories. For example, a key word taken from a configuration file.
OpenOffice.org	Defines application names. Depending on context, the application and command name may be the same but formatted differently. For example, most commands are written in lowercase, while applications names usually begin with an uppercase character.
Files	Indicates menu entries or graphical interface labels. The underlined letter, if present, informs you of a keyboard shortcut, accessible by pressing the **Alt** key plus the letter in question.
Le petit chaperon rouge	Identifies foreign language words.
Warning!	Reserved for special warnings in order to emphasize the importance of words. Read out loud.

> Highlights a note. Generally, it gives additional information about a specific area.

> Represents a tip. It can be general advice on how to perform a particular action, or hints at nice features, such as shortcuts, which could make your life easier.

Be very careful when you see this icon. It always means that very important information about a specific subject will be dealt with.

4.2. General Conventions

4.2.1. Commands Synopsis

The example below shows the symbols you will see when the writer describes the arguments of a command:

```
command <non literal argument> [--option={arg1,arg2,arg3}] [optional arg ...]
```

These conventions are standard and you will find them elsewhere such as in the `man` pages.

The "<" (lesser than) and ">" (greater than) symbols denote a **mandatory** argument not to be copied as is, which should be replaced according to your needs. For example, `<filename>` refers to the actual name of a file. If this name is `foo.txt` you should type `foo.txt`, not `<foo.txt>` or `<filename>`.

The square brackets ("[ ]") denote optional arguments, which you may or may not include in the command.

The ellipsis ("...") means an arbitrary number of arguments may be included.

The curly brackets ("{ }") contain the arguments authorized at this specific place. One of them is to be placed here.

4.2.2. Special Notations

From time to time, you will be asked to press, for example, the keys **Ctrl-R**, which means you need to press and hold the **Ctrl** key and tap the **R** character right after as well. The same applies for the **Alt** and **Shift** keys.

We use capital letters to represent the letter keys; this doesn't mean that you have to type them capitalized. However, there might be programs where typing **R** is not the same than typing **r**. You will be informed when dealing with such programs.

Regarding menus, going to menu item File→Reload user config (**Ctrl-R**) means: click on the File text displayed on the menu (generally located in the upper-left of the window). Then in the pull-down menu, click on the Reload user config item. Furthermore you are informed that you can use the **Ctrl-R** key combination (as described above) to get the same result.

4.2.3. System-Generic Users

Whenever possible, we use two generic users in our examples:

Queen Pingusa	queen	This is our default user, used through most examples in this book.
Peter Pingus	peter	This user can be created afterward by the system administrator and is sometimes used to vary the text.

5. Managing Configuration Profiles

By default Mandriva Linux Control Center profiles enable you to configure network setups for different locations. This is especially useful for laptops which need a different configuration for home, at the office, the coffee shop, etc. It also allows you to activate different services from one profile to another (see *Configuring Start-Up*

Services, page 60).

5.1. Profile Handling

New profiles you wish to create are based on the active one. All modifications are automatically recorded in the active profile. A single menu (Profiles) lets you manage them.
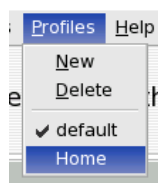
Figure 2. The Control Center's Profile Menu

New

> Creates a new profile based on the active one's settings. A dialog pops up asking for the name of the new profile. Don't forget to switch to that profile after creating it.

Delete

> Shows a list of profiles you can remove. The active profile won't be shown because it can't be removed while being used.

default

> The entries which follow correspond to all available profiles, the active one being checked. Click on a profile name to switch the host configuration to that profile.

Let's take an example. You come back home with your brand new laptop which your system administrator configured so you can connect to your corporate network. You now want to configure the network to access the Internet from home with a dial-up connection.

1. Create a new profile called "Home".
2. Switch to it.
3. Reconfigure your network so that the modem, instead of the network card, is used to access the Internet (see *Network and Internet Connection Management*, page 47).
4. Connect to the Internet.
5. When back at the office, switch back to the "default" profile.

5.2. Choosing a Profile at Boot Time

It's more convenient to specify a profile at boot time than to activate it once the system is booted. drakboot (*Changing your Boot-up Configuration*, page 93) allows you to associate a specific profile to each menu entry of the bootloader.

Label	linux
Image	/boot/vmlinuz
Root	/dev/sda1
Append	resume=/dev/sda5 splash=silent
☐ Default	
Video mode	800x600 16bpp
Initrd	/boot/initrd.img
Network profile	Home

Ok   Basic   Cancel

Figure 3. Associating a Profile to a Boot Entry

Create or modify a boot entry in drakboot. In the Advanced options, access the Network profile pull-down menu and select the profile you want to associate to it.

6. The Drakbug Reporting Tool

If you encounter unexpected behavior in Mandriva Linux-specific tools, Drakbug allows you to report it to the development team.

> To be able to report bugs using Drakbug, you need a working Internet connection as well as a Drakbug account (`http://qa.mandriva.com/createaccount.cgi`).

To run Drakbug, go to the Help→Report Bug menu entry of the faulty tool, or run it from Mandriva Linux Control Center's own menu. Drakbug can also be triggered automatically by a crashed Mandriva Linux tool.

Mandriva Linux release 2006.0 (Official) for i586

Select Mandriva Tool: Mandriva Linux Control Center

or Application Name (or Full Path):   Find Package

Package: drakconf-10.3-0.6mdk

Kernel: 2.6.12-3mdksmp

To submit a bug report, click on the report button. This will open a web browser window on Bugzilla where you'll find a form to fill in. The information displayed above will be transferred to that server. Things useful to include in your report are the output of lspci, kernel version, and /proc/cpuinfo.

Help   Report   Close

Figure 4. Reporting a Bug

In order to correctly report a bug, it is important to identify the package it is related to. To make this task easier, enter the application name in the Application Name (or Full Path) field and click on the Find Package button.

Click on the Report button. Your web browser will then open. If you are not logged in to the Mandriva Bugzilla web site (`http://qa.mandriva.com/`) you will be asked to log in (or create an account if you do not have one). Once you are logged on the site, complete the bug report as completely and accurately as possible and click on Commit

Chapter 1. Package Management through Rpmdrake

Mandriva Linux uses the RPM packaging system and provides convenient tools to simplify package installation by handling software dependencies automatically. The urpmi set of tools is command line based and discussed briefly in the *Reference Manual*; here we will concentrate on Rpmdrake: Mandriva Linux's graphical software installation tool.

Rpmdrake consists of different tools, which you access by choosing one of the entries of System+Configuration+Packaging in the main menu or by clicking on Software Management in the Mandriva Linux Control Center (see figure 1-1).
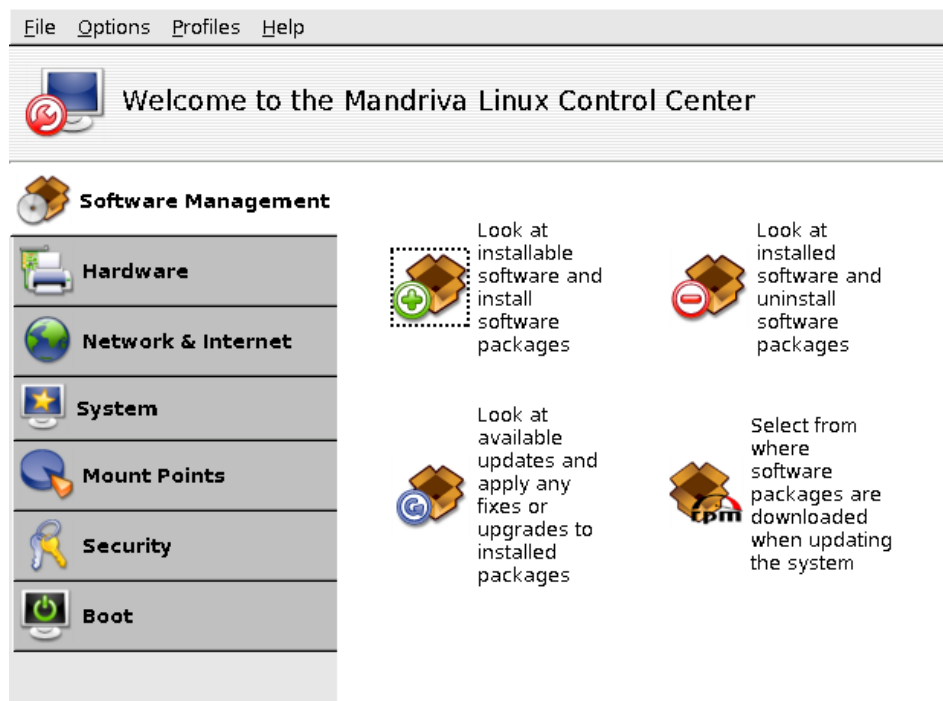
Figure 1-1. Software Management in the Mandriva Linux Control Center

We recommend that you access Rpmdrake via the Mandriva Linux Control Center.

1.1. Install Software

When launching this tool you have to wait a few seconds, while Rpmdrake searches the available packages database. Then you are presented the Software Packages Installation interface.
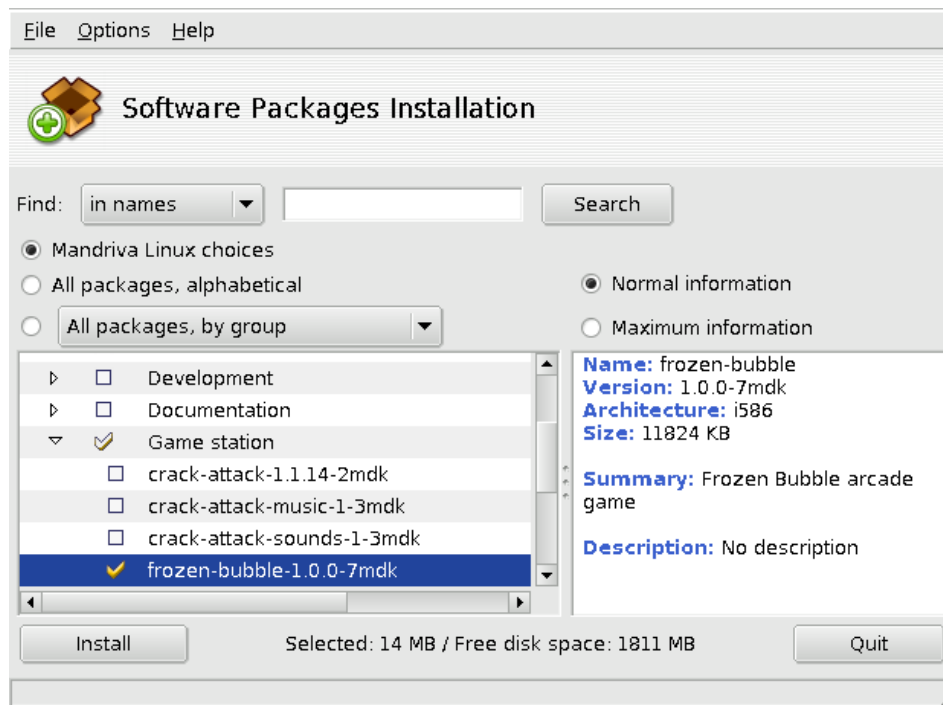
Figure 1-2. The Software Package Installation interface

The window is divided into four parts: the upper part offers you some possibilities to manipulate the list of packages you can install. You will find this list in the middle on the left. Next to it, on the right, you have an area where you can find a description of the currently selected package. At the bottom of the window you will find two buttons and information about how much space is required to install the selected packages and how much space you have available on your disk.

> Additionally, a status bar in the lower part of the window displays messages about actions currently in progress or completed.

1.1.1. Selecting Packages to Install

Let us have a closer look at the interface as shown in figure 1-2. A package named "`frozen-bubble-1.0.0-7mdk`" is selected in the tree-view and in the package description area you see the required disk space, a short summary (Frozen Bubble arcade game) and a detailed description (Full-featured, colorful animated penguin eye candy...).

> If your software medium repository is configured to use complete package lists (not the summary `synthesis` files, but the full `hdlist` ones, which happens to be the default option after installing your Mandriva Linux system), you may get more information on the package by choosing the Maximum information radio button in the access-area. In addition you can see a list of the files provided by the package and the change log.

The status bar shows you the disk space required by the selected packages as well as the current free space. Please note that due to dependencies, the disk space required by the selected packages might be greater than the size required by the chosen package by itself.

> Rpmdrake shows you an alert box if you try to install more software than the free available disk space. Nevertheless you may proceed (you may, for example, be able to remove some no longer required files, such as programs downloaded from Internet in the past and which you do not use anymore, to allow the installation to continue).

Now you can begin the installation, by simply clicking on the Install button. A new window appears, showing you a progress bar of how your installation is proceeding. If you prefer to leave without doing anything, you can just click on the Quit button.

While selecting applications to install, it may happen that you choose a package which requires dependencies (additional libraries or another tool) to work correctly. In this case Rpmdrake displays an information window allowing you to choose whether to accept the selected dependencies, or to Cancel the operation (figure 1-3).
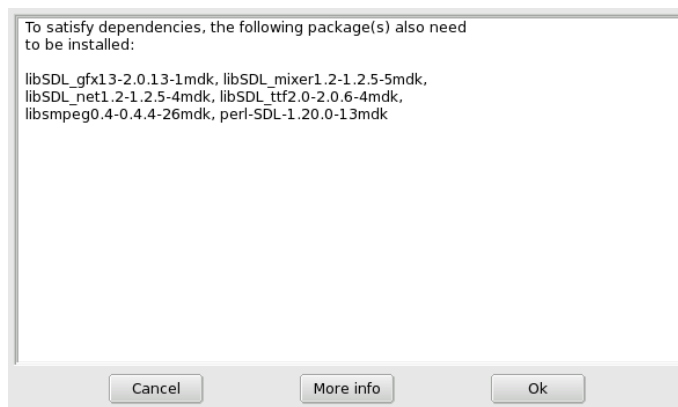
Figure 1-3. Rpmdrake — dependency alert box

Another possible scenario might be: you want to install a package which requires dependencies, and various packages are capable of providing that dependency. The list of alternatives is then presented (figure 1-4). You may read the additional information presented by clicking the Info... button to help you choose the best alternative.
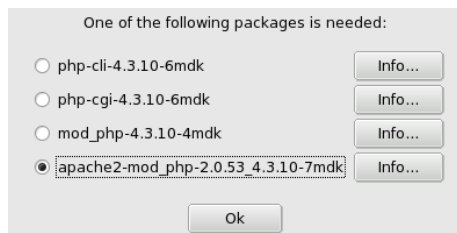
Figure 1-4. Rpmdrake — package alternatives

We will now take a closer look at the search and sort functions provided to ease your job as a system administrator.

1.1.2. Searching Packages

Sometimes you may know about some tool you saw somewhere or you heard of at a friend's place, now you wonder how to find and install them on your system.

It is really easy: just type the name, (or part of the name), in the text area next to the Search button. Then choose, from the pull-down list, where you want to look for it (either in the package name, in the description provided with the package or in the names of the files stored in the packages). After clicking on the Search button, a new list appears (Search results), showing you the results Rpmdrake found while scanning the packages databases.

Let us take a look on the different sort orders:

Mandriva Linux choices

This sort order shows the list of packages in the four groups you saw during the installation of Mandriva Linux. This is the easier sort order because it focuses on a selected part of the available packages, those which are considered to be the most useful of the distribution.

All packages, alphabetical

Instead of a tree view, you are presented with a flat list of all available packages you can install on your system.

All packages, by group

Here you are shown the list of packages grouped by their functions (e.g. Games, System, Video, etc.).

All packages, by size

Here you get a list sorted by size (the biggest package at the top, the smallest at the bottom of the list).

All packages, by selection state

If you choose this presentation, you end up with a flat list, in which all selected packages are shown first, the other available packages below them. To make it easier for you, those two parts are sorted alphabetically. This sort order is particularly useful just before the actual package installation, because it helps you to see the selection of packages to be installed.

All packages, by medium repository

Once again you find the packages sorted alphabetically, but this time they are shown under the name of the data medium they belong to.

All packages, by update availability

In this mode, you might get two groups of packages: a list of packages which might be added to your machine, and a second list of the packages of which you have an older version already installed on your computer.

1.2. Remove Software

As this interface works like the "Install Software" one, we will not repeat its basic functions. The only difference to the installation interface is that you will deal with the already installed packages list from which you'll choose those you want to remove, instead of those packages which might be useful to install on your computer.

1.3. Mandriva Linux Update

Once again: if you have already worked with Rpmdrake's software installation interface, you should feel comfortable with Mandriva Linux Update. But let us look at the details.

When you launch this tool, it first asks you to choose an Internet repository to check for updates. You should choose one in a country near you.

A small difference to the "Install Software" interface is the ability to choose which kind of update you want to install on your computer by grouping them in certain ways. You may select:

Security updates

These updates solve security issues and should be installed as soon as possible.

Bugfixes updates

These updates fix application misbehavior.

Normal updates

These updates just bring slight improvements.

The other difference is a new text section (Reason for update) inside the package description area. It provides you with information about why this update was made available. This may help you decide if you want to update certain packages or not. When you have a slow Internet connection or you have to pay per MB when you are downloading, it would be wise to read it.

If you are not yet familiar with the interface, please go back to *Install Software*, page 9 to learn about it.

1.4. The Software Media Manager

This part of Rpmdrake is dedicated to the configuration of the package media repositories. As you can see in figure 1-5 there are some media configured: "Main", "Contrib", etc. With this tool you can add other software media: a CD from a magazine containing RPMs, a Web repository, etc.
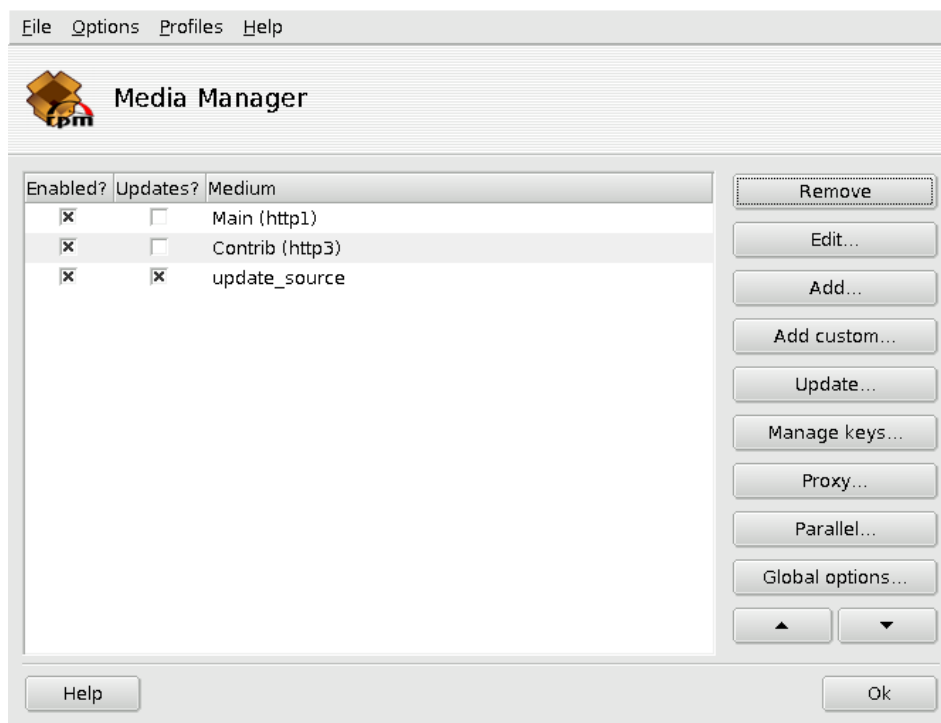
Figure 1-5. The "Software Media Manager"

The check boxes in the left-hand columns allow you to flag the repositories:

Enabled?

Uncheck this box to temporarily disable the corresponding medium. The packages contained in this medium will not be available for installation until you enable the medium again.

Updates?

This box must be checked for update media, that is, media that contains updates of packages that are already in another medium, albeit with an older version number. Thus only update media are taken into account when looking for updates.

Various buttons allow you to perform actions on the selected media.

Remove

Allows you to remove a medium which you no longer use. Simply select the medium to be removed in the list and click this button.

Edit

> Here you may change the URL or the relative path to the `synthesis/hdlist` (if you do not know what we are talking about it is wise to leave this window via Cancel instead of Save changes).
>
> In case you need to pass through a specific proxy to access this medium, you can configure it here by clicking on the Proxy... button. Note that you can also define a global proxy for all remote media through the Proxy... button of the main interface.
>
> This option also allows you to change from using `hdlist` files to `synthesis` files, which are much smaller but with less information on packages. Synthesized files only have information about package names, their dependencies and a short summary, you won't be able to search for files inside uninstalled packages, for example, and you won't be able to see the full description for a package if you click on its name.

Add...

> Use this button to add to your system all publicly available official package sources from Internet repositories. This is useful for example if you have a fast Internet connection or only have the first installation CD at hand. Choose a mirror geographically near to your location.
>
> After choosing a mirror and clicking Ok, package information for the source you chose is downloaded and all included packages will be available for you to install and update your system.

Add custom

> This button provides access to a new dialog, in which you may reference a new software package medium.
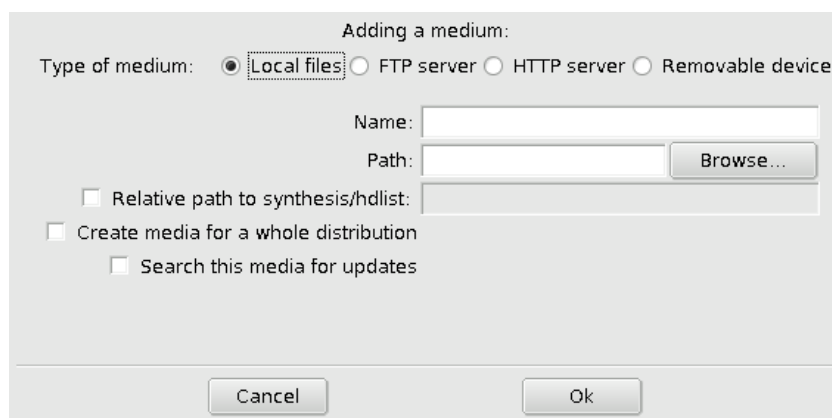
Figure 1-6. Rpmdrake — adding Media

Update...

> You are here shown a list of already defined data media. You can choose the ones where you want to update the list of available packages in it. This is useful for remote media to which new packages are being added. Just start the process by clicking on Update.

Manage keys...

> It is important that any new packages you install are authenticated. To do so, each package can be electronically signed with a "key", and you can allow/disallow keys on a per-medium basis. On figure 1-7, you can see that Mandriva Linux key is allowed for medium "Installation CD". Click on Add a key... to allow another key for the selected medium (beware, do this with care, as with all security-related questions), and on Remove key to remove a key from the selected medium.
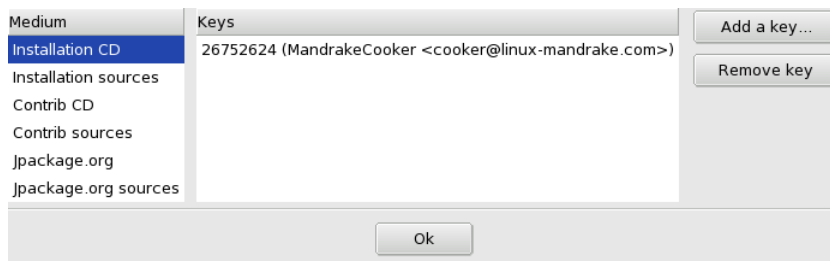
Figure 1-7. Rpmdrake — managing keys

Proxy...

If you are sitting behind a firewall and you still need to access remote media (especially for package updates), you can do so if you have a proxy server which leads to the Internet (at least in an area where you can find a package server). Normally it should be enough to fill in the Proxy hostname to get it working (figure 1-8). If you need a user / password combination to get through the proxy, you can also specify these here. Just confirm your changes by clicking on OK and you are done.
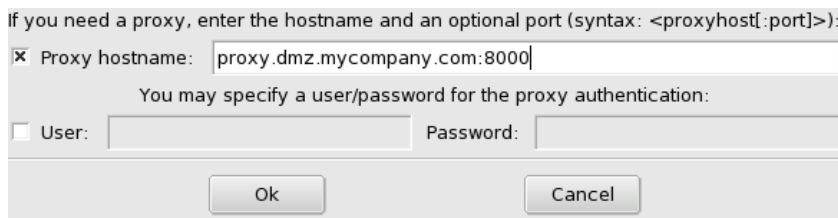
Figure 1-8. Rpmdrake — configuring a proxy

Parallel...

If you are running a large network of computers, you may want to install a package on all the computers in parallel; this button opens a dialog window allowing the configuration of the "Parallel" mode. As it is rather complicated and only useful to a limited group of people, this short introduction will not give more details about it.

Global options...

This button allows you to configure the program used to download new packages and if the source should be checked against a given key. These choices are used on all installed sources.

Up and Down arrows

These buttons allow changing the order that sources will be used when installing a package.

For advanced users

Rpmdrake processes the urpmi configuration file (`/etc/urpmi/urpmi.cfg`) from top to bottom to obtain a list of medium repositories and the packages that each contains.

If a given package appears in more than one medium, and versions differ, then the one with the newest version will be used, ignoring the rest.

When a package with the same version appears in more than one medium, only the one appearing first will be used, the rest will be ignored.

Either way, you won't miss available packages, the newest one appearing first is the one that will be used.

Rpmdrake processes the urpmi configuration file (`/etc/urpmi/urpmi.cfg`) from top to bottom to obtain a list of medium repositories and the packages that each contains.

If a given package appears in more than one medium, and versions differ, then the one with the newest version will be used, ignoring the rest.

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Either way, you won't miss available packages, the newest one appearing first is the one that will be used.

Chapter 2. Controlling a Remote Machine

Being able to remotely control another machine offers many possibilities, from remote technical assistance to teaching how an application works. In this chapter we describe the configuration and usage of Rfbdrake, a tool to easily set up a virtual network computing environment under Mandriva Linux.

2.1. Concepts

Here are a few concepts:

Virtual Network Computing (VNC)

An environment which allows you to interact with a remote computer "as if you were sitting in front of that computer". The computers don't have to be of the same type, nor do they have to be running the same OS: they only need a working TCP/IP network connection.

Controlled Computer

This is the computer to be controlled without the need, or the possibility, to be actually sitting at its console. It is remote from your location. Also called the "server".

Controlling Computer

This is the computer in front of which you're sitting, from where you interact with the controlled (remote) computer. Also called the "viewer".

2.2. Installation and Setup

Make sure the `rfbdrake` package is installed and then access Rfbdrake through the Mandriva Linux Control Center: an Online Administration section is accessible from which you can start the Remote Control of another machine (Linux/Unix, Windows) utility[1].

2.2.1. Controlled Computer Setup

In this section, we assume you can access Rfbdrake. If this is not the case (typically remote administration tasks), then you need to:

1. Make sure the `tightvnc-server` package is installed on the remote machine.

2. Connect to the remote machine using `ssh`.

3. If it's not already running, start the VNC server by executing `vncserver` in a console. If this is the first time `vncserver` is run on the system with that user account, then you have to enter the password clients will have to use to connect and confirm it. The system informs you which display number clients have to use. Run `vncserver -kill :DISPLAY_NUMBER` when you no longer need the VNC server.

Then connect as a client to control the remote machine (see *Controlling Computer Setup*, page 18).

For the machine that will act as the controlled (server) computer, select the Allow control of my machine (linux server) option. Fill the Set Password field. This is mandatory or Rfbdrake will complain. Please bear in mind that this password is not related to the user's local/remote account password in any way.

---

1. You can also launch Rfbdrake by choosing Internet+Remote access→Virtual Network Connection in the main menu.
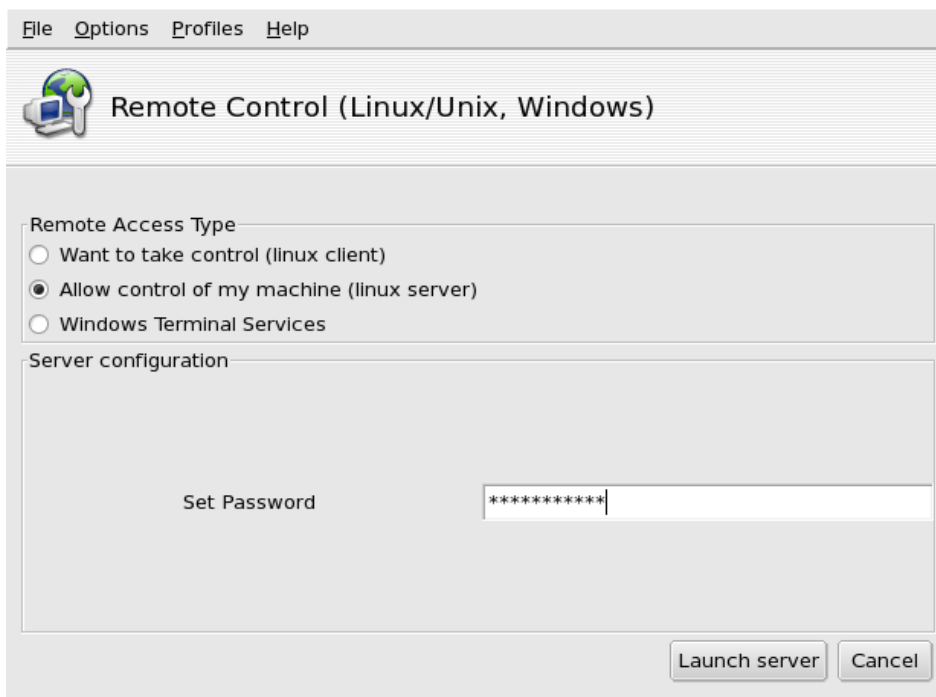
Figure 2-1. Server Options

Once you click on the Launch server this icon indicates that the computer is ready to accept incoming VNC connections. Closing it will stop the VNC server. Right-click on it to access a pop-up menu with some options.
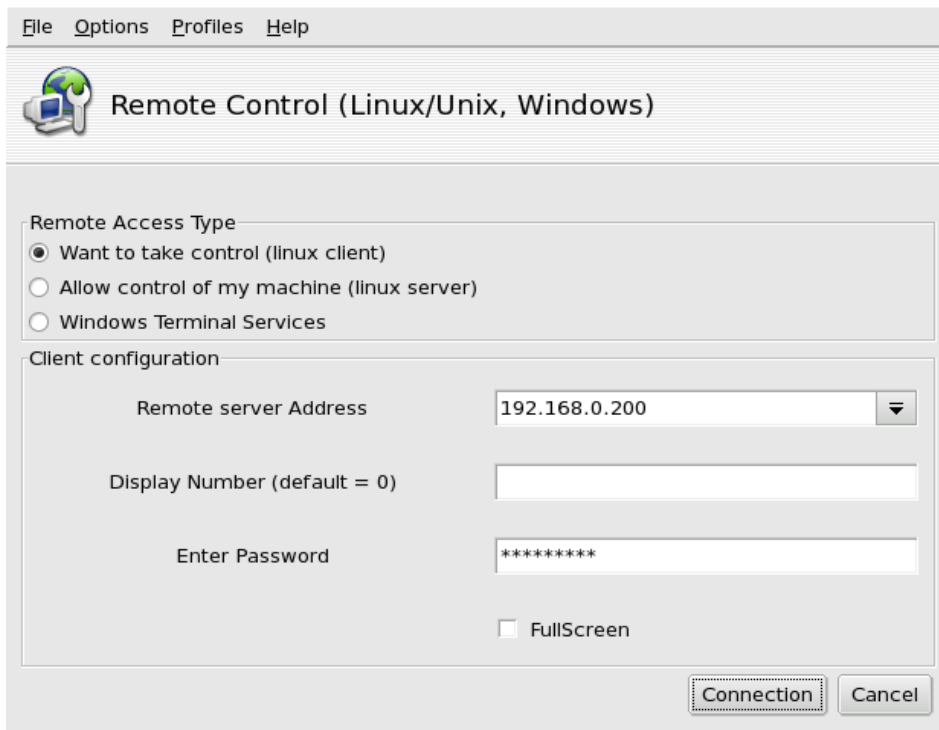
> If the system to be controlled is behind a firewall, then you have to make sure that port `tcp/5900+N` is opened in the firewall, where `N` is the VNC server display number.

2.2.2. Controlling Computer Setup

On the machine which will act as the controller (viewer) computer, select the Want to take control (linux client) option. Fill the Remote server Address pull-down list with the IP address or hostname of the computer to be controlled. Fill the Display Number field with the remote computer's display number, or leave it empty to use the default (display number `:0`).

Figure 2-2. Viewer Options

To access the VNC server, enter its related password in the Enter Password field. Put a mark in the FullScreen check-box to have the remote computer's desktop use all of the controller computer's screen. Otherwise the remote desktop will be displayed in a window. Once you are satisfied with your settings, click on the Connection button to access the remote computer.

2.3. Connecting to a Windows® Terminal Server

Figure 2-3. Windows Terminal Services Options

Select the Windows Terminal Services option to connect to Terminal Services on a Windows® machine. Fill the Windows Hostname pull-down list with the hostname of the Windows® machine or its IP address. Select a desktop size in the Screen Size pull-down list and a language for the keyboard in the Keyboard Language pull-down list. Click on the Connection button once you're satisfied with your settings.

2.4. Remote Control in Action

Once you connect to the remote computer you see its desktop and you are able to perform **any** action as if you were sitting in front of it.
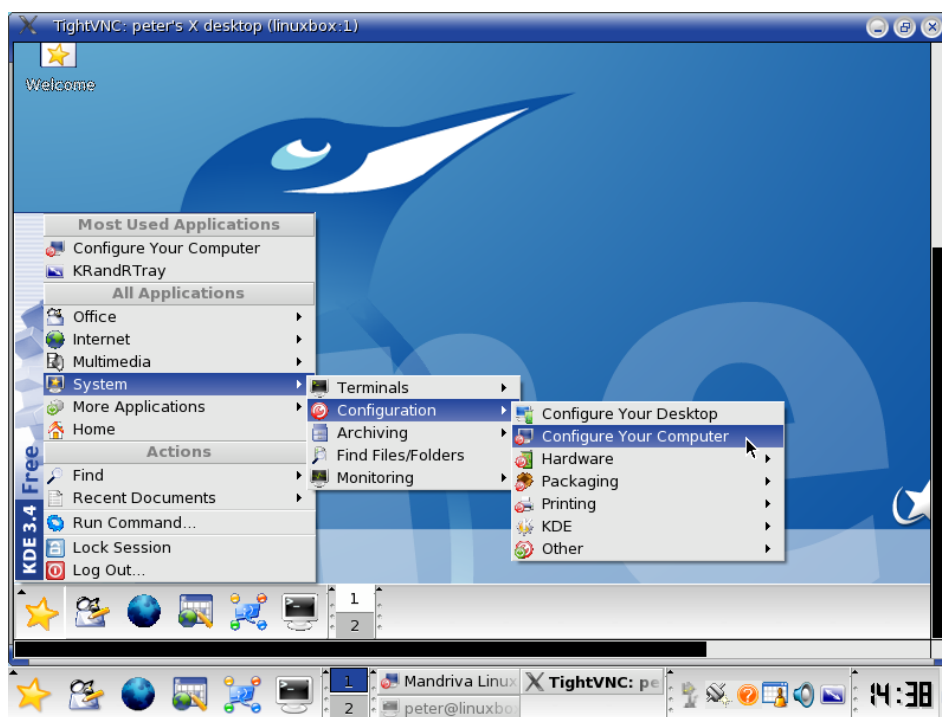
Figure 2-4. Controlling a Remote Computer

> The mouse cursor becomes a round point and the remote computer's arrow-cursor will "follow" it. This can prove useful to keep track of where the cursor is at any given time.

The limiting factor of the response time of the remote computer is the speed of the link to it. For LAN connections (typically 100 Mbps), you will feel that you're really in front of the remote computer. For Internet connections (typically between 56 Kbps and 1-2 Mbps), don't expect "instantaneous" response from the controlled computer.

Once you've finished using the remote computer, you can disconnect from it by closing the VNC viewer window. If you're using the full-screen mode, press the **F8** key and select the Quit viewer option from the menu which pops up.

2.5. More Documentation

This short introduction to VNC has hopefully shown you some of the possibilities of remotely controlling computers. The options are endless, please refer to the TightVNC Documentation (`http://www.tightvnc.com/docs.html`) and to the VNC Documentation (`http://www.realvnc.com/documentation.html`) web sites.

Chapter 3. "Hardware" Section

3.1. Configuring your Hardware

3.1.1. Hardware Detection and Configuration

The HardDrake project has been developed to simplify hardware detection and configuration under GNU/Linux by providing a user-friendly interface.

3.1.1.1. What Is HardDrake?

HardDrake is a service for hardware detection, run at system boot time, and also a full GUI-based tool which ties together many of the tools already included in a GNU/Linux distribution. It automates and simplifies the process of installing new hardware. For the most part, HardDrake will be able to detect most devices.

On one hand, HardDrake is used to display information, and on the other, it can launch configuration tools. With its easy-to-use interface, you can browse all the hardware your system contains.

HardDrake uses the "ldetect" engine, so if your new hardware is not detected, you may try to upgrade the `ldetect` library itself and its hardware database, located in the `ldetect-lst` package.

3.1.1.2. Usage

To launch HardDrake, you can start it through:

- the Mandriva Linux Control Center: click on the Hardware category, and then on the Hardware icon.
- a terminal: type `harddrake2` as `root`. You can also pass parameters to HardDrake through the command line (type `harddrake2 -h` to get a list of possible parameters).
- the desktop: go to the main menu. The HardDrake entry is in the System+Configuration+Hardware→HardDrake sub-menu.

After all devices have been detected, the main HardDrake window will appear (see figure 3-1).

On the left, you can see the device tree showing you all of the hardware categories.
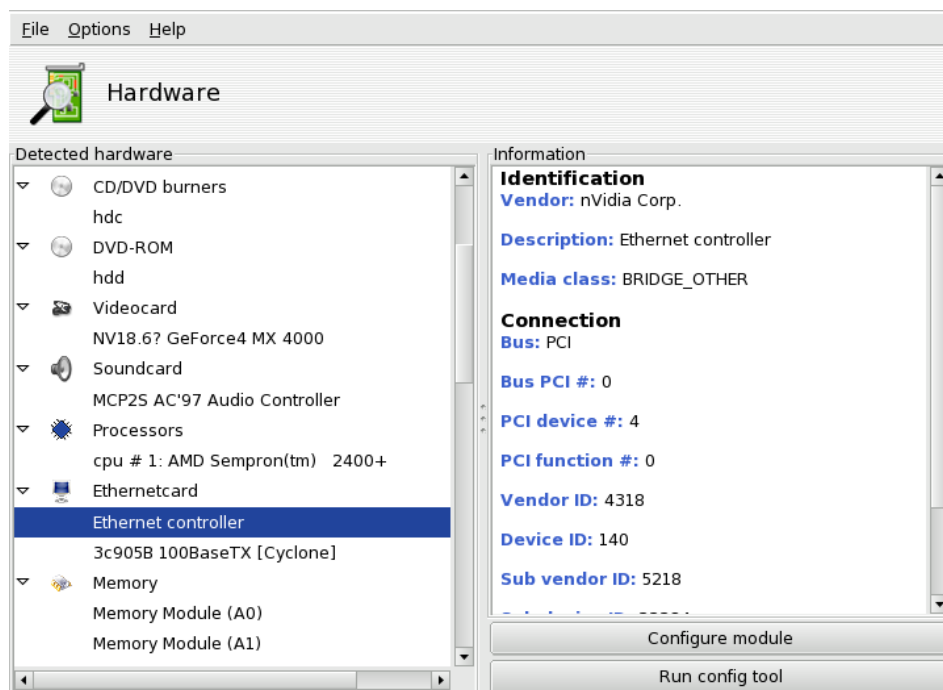
Figure 3-1. Selected Device

By selecting a device, you will see additional information about it in the right frame. To better understand the meaning of the information presented, you can consult the help page accessible by choosing Help→Fields description from the menu.

Depending on the device selected, two other buttons may appear:

- **Configure module.** This pops up a window with all the module device parameters listed. **For experts only!**
- **Run config tool.** Launches the Mandriva Linux configuration tool (available through the Mandriva Linux Control Center) associated with that device.

A special category called `Unknown/Others` might also show up, containing all the currently unknown hardware in your system, as well as known hardware that does not fit into the existing categories (such as thermal sensors, random number generators, etc.).

You can also toggle the entries in the Options menu to enable automatic detection of some hardware which wouldn't have been detected otherwise. You need to restart HardDrake for those changes to have effect.

If you have a Mandriva Online account and want to help us improve hardware support under Mandriva Linux, or want to see your hardware better supported in the future, you can choose File→Upload the hardware list from the menu and fill the form with your account data, then click on the Ok button: your hardware list will be uploaded. You need a working Internet connection.

3.1.2. Problems/Troubleshooting

If you think you have found a bug related to HardDrake, report it using the Mandriva Linux bug reporting tool (see *The Drakbug Reporting Tool*, page 8).

HardDrake does not probe for ISA PnP devices. If you have an ISA PnP sound card, run `sndconfig` or `alsaconf` from the command line. You may need to install the `sndconfig` package or the `alsa-utils` package.

3.2. Controlling the Graphical Configuration

This set of tools allows you to configure your graphical display. With it you will be able to change your video card, your resolution and your monitor. It can be useful if you happen to change one of your graphical components after the initial installation.

> If you cannot boot into graphical mode and you end up in a console (command-line interface), log in as `root` and launch `XFdrake`. You will get a tool similar to the one described in *Controlling All Video Parameters*, page 24, but in text mode.

The graphical configuration tools are accessible through different icons in the Mandriva Linux Control Center Hardware section.

3.2.1. Changing the Monitor
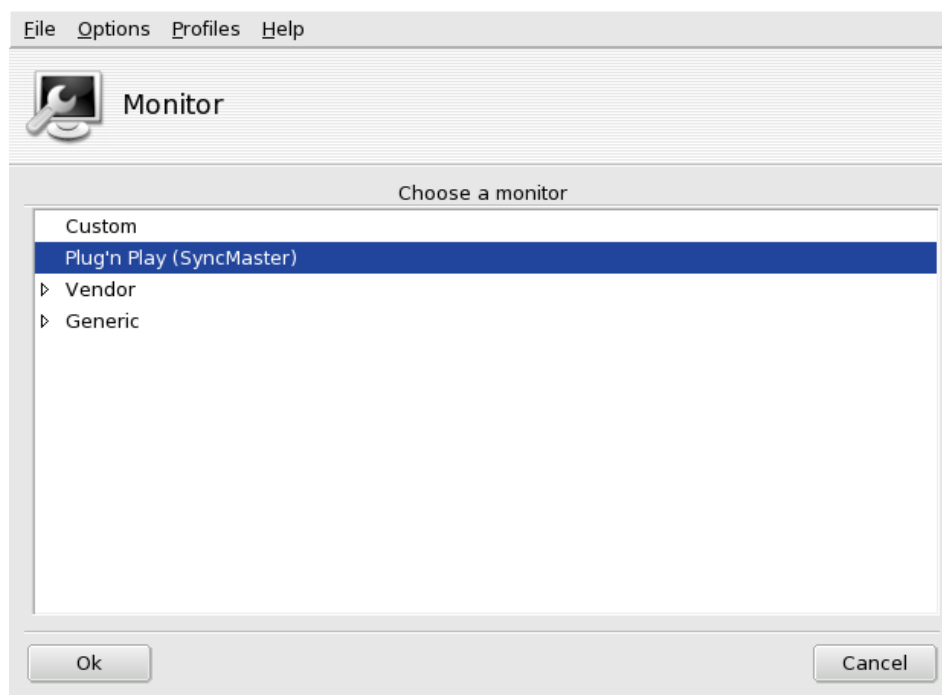
Figure 3-2. Choosing a New Monitor

> This tool allows you to change the monitor type currently in use. When you click on it a window pops up, listing many monitor models (see figure 3-2). If your monitor was automatically detected it will be listed as Plug'n Play along with its model.

If your monitor wasn't automatically detected, you can choose it from the list. If you don't find your monitor or a compatible one, choose one with parameters corresponding to your own monitor from the Generic entry, at the bottom.

3.2.2. Changing Resolution
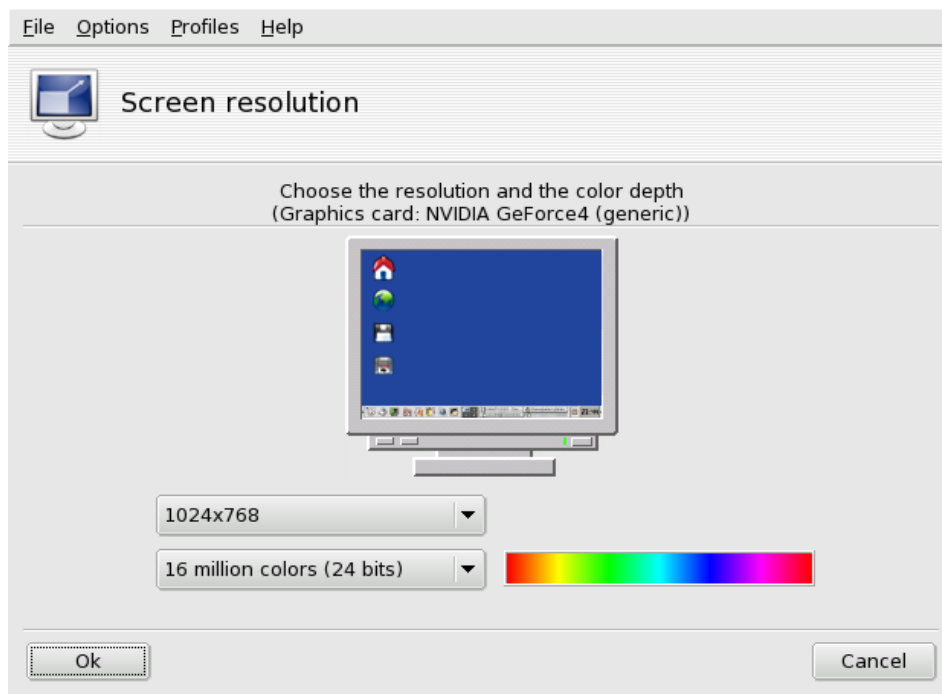
Figure 3-3. Changing the Resolution of your Screen

This tool enables you to change the current screen resolution (`800x600`, `1024x768`, etc.) and the color depth. Simply choose the one you wish to use. The monitor in the window displays what the desktop will look like with the chosen configuration (see figure 3-3). If it looks good, click on OK.

The changes will be activated after you quit and restart your graphical environment.

By default, the available resolution list only shows resolutions supported by your video card and monitor combination. There is a special entry named Other which adds more possible resolutions along with their ratio. Bear in mind that most monitors are designed with a `4:3` horizontal vs. vertical ratio.

3.2.3. Controlling All Video Parameters
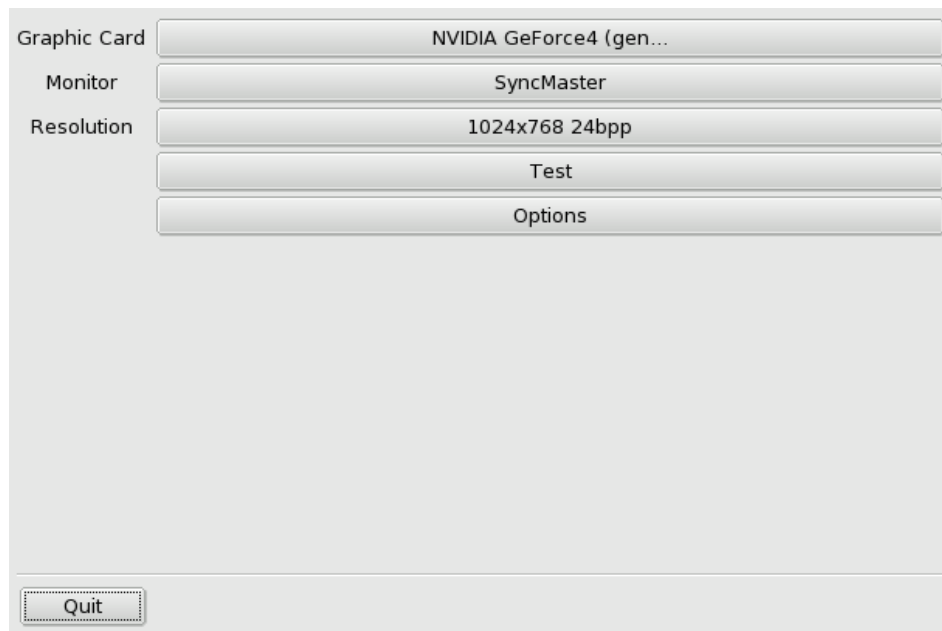
Figure 3-4. XFdrake Main Window

If you happen to change your video card after installing your system, or want to have full control over the graphic configuration, run as `root`, `XFdrake` from a console. The tool shown in figure 3-4 will be shown.

Let's look at the interface. The first three buttons allow you to change certain aspects of the graphical configuration:

Graphic Card

> The button displays the name of the graphic card currently configured. If you wish to change it, just click on it. Depending on your card, different servers may be available, with or without 3D acceleration. You may need to try different ones until you get the best result.

> In case you cannot find the graphic card you have, but you know which driver supports it, select it from the Xorg entry at the bottom.

Monitor

> Enables you to change the monitor with the tool described in *Changing the Monitor*, page 23.

Resolution

> Enables you to change the pixel resolution and the color depth with the tool described in *Changing Resolution*, page 23.

Then, there are more buttons:

- **Test.** Click on this button to verify that your modifications actually work. It is highly recommended you do test it, because if it does not work, it will be harder to recover a working graphical environment later. If the test fails simply wait until it ends. If you are not satisfied with the suggested settings, choose No during the test, and you will be returned to XFdrake's main menu.

> Depending on your video card, video testing may not be available. You will be warned of such a situation. If it happens that the settings are incorrect and your display does not work, refer to the *Troubleshooting* section of the *Starter Guide* manual to use XFdrake's text version.

- **Options.** You can choose to start the graphical server when your system boots. Answer No if you prefer to have a text login. Selecting Yes will launch the graphical login manager at boot time.

- **Quit.** If you modified your graphical display in some way, the current configuration will be displayed and XFdrake will ask you whether you want to keep your changes or not. This is your last chance to go back to the old configuration. If all seems OK, click on Yes. If you wish to restore the previous parameters, click on No.

The changes will be activated after you confirm them and restart your graphical environment.

3.3. Setting up a TV Card with DrakxTV

This tool will configure your TV tuner card in order for you to watch television on your computer display.

First of all you should make sure your card is supported by Mandriva Linux by consulting the Hardware Compatibility page (`http://www.mandriva.com/hardware`) or the BTTV driver home page (`http://linux.bytesex.org/v4l2/bttv.html/`).

Modern TV viewing programs have their own configuration and channel-scanning interface embedded. You only need to run DrakxTV if you plan to use xawtv with old TV cards based on the btxxx or saa71xx chips.

Make sure your card is correctly connected to your antenna or cable, so that channel scanning runs properly.
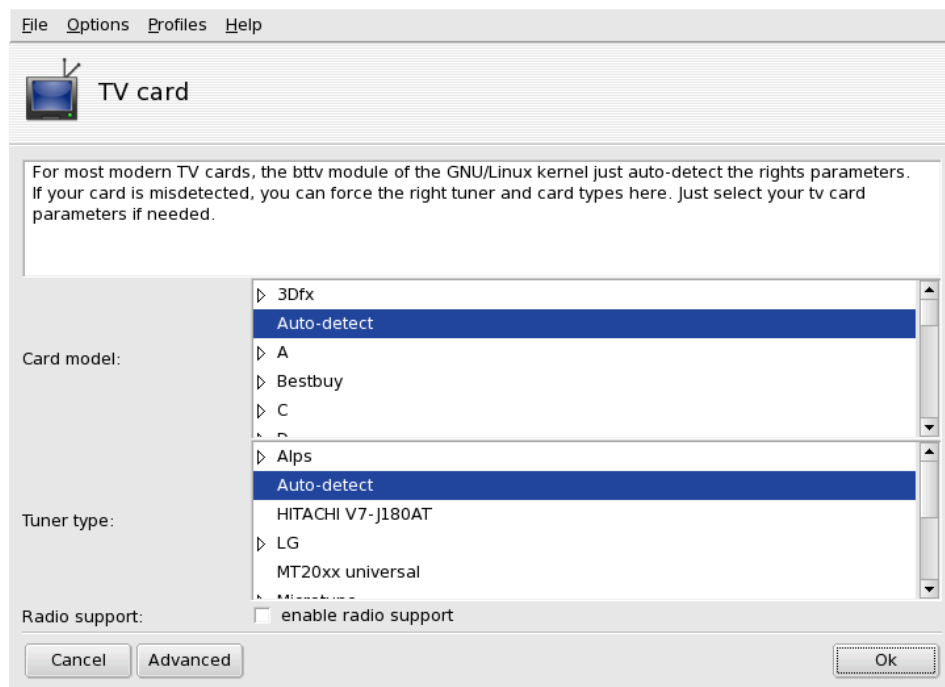
Figure 3-5. Choosing the TV Card Model

When you first launch the tool, and if a TV card is detected, the main configuration dialog (figure 3-5) will appear. Leave the default Auto-detect entries and press OK. If you notice afterward that your card was not properly configured, you can run DrakxTV again and select the proper card.

Figure 3-6. Choosing the TV Norm and Country

You simply need to inform DrakxTV about the norm used for the television signal you receive, and the country you're in. You also have to select the user who is going to use xawtv so that his configuration file is created.

After you press OK, DrakxTV will begin automatic channel scanning. Once this is done, your TV setup will be complete and you will be able to watch television on your computer using xawtv. Other applications allowing to you watch TV under Mandriva Linux are kdetv, tvtime and zapping.

3.4. Changing your Keyboard Layout

This tool allows you to define another keyboard layout. This is commonly done when the keyboard you want to use is different from the one chosen at installation time.
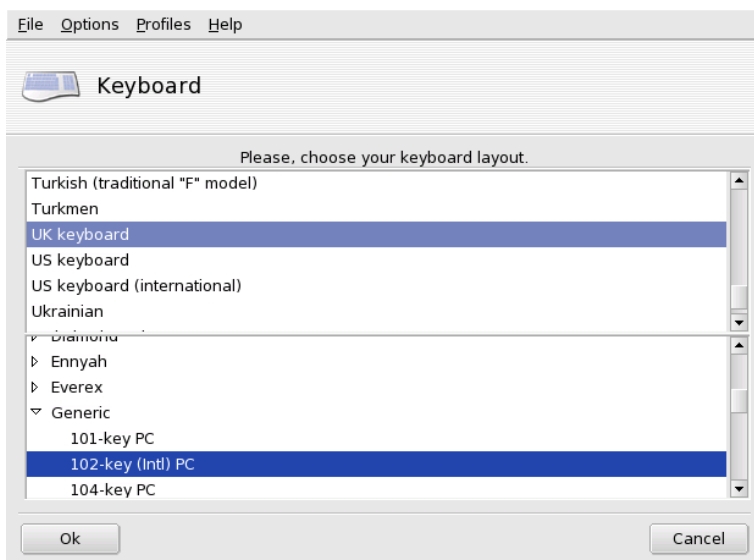
Figure 3-7. Choosing a Different Keyboard Layout

Select your keyboard's language and then its model from the lists shown in figure 3-7. If you own a multimedia keyboard and are lucky enough to have it listed in the manufacturer list, chances are most multimedia keys on it will be supported. Otherwise, choose your keyboard type under the Generic branch. Changes are effective immediately after clicking OK.

If you choose a keyboard layout based on a non-Latin alphabet, the next dialog will ask you to choose the key binding that will switch the keyboard configuration between the Latin and non-Latin layouts.

3.5. Changing your Mouse

This tool enables you to set up a different mouse, which is useful if the mouse you are currently using is not the same as the one you chose at installation time.

Synaptics Touchpad function is automatically configured to work with almost every touch pad found on notebook computers. The same goes for Wacom® tablets.
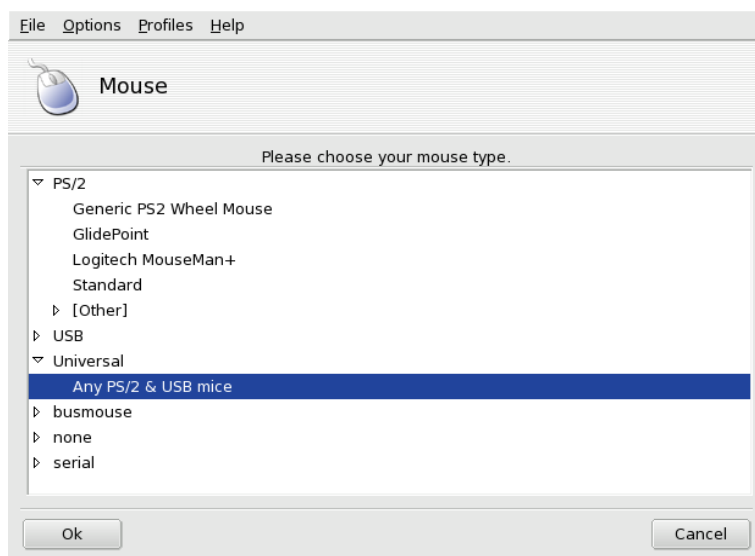
Figure 3-8. Choosing a Different Mouse

Mice are sorted into a tree according to their connection type and model (see figure 3-8). Highlight the mouse of your choice and click OK. Changes take effect immediately after the mouse test is done.

The Any PS/2 & USB mice option works with virtually all modern mice.

3.6. Configuring Printers with PrinterDrake

This tool allows you to:

- configure a newly installed printer on your machine;
- configure your machine to act as a server for a printer which has just been connected to your local network;
- set up your machine to access network printers served by other servers (GNU/Linux as well as Windows® ones).

If you just installed a printer that wasn't available when you installed Mandriva Linux, make sure it is correctly connected and powered on before launching the configuration tool.

3.6.1. Initial Configuration

When you first launch the PrinterDrake tool, it may be in one of these states:

3.6.1.1. There is no printer directly connected to the computer.

There are no printers found which are directly connected to your machine (Make sure that all your printers are connected and turned on).

Do you want to enable printing on printers in the local network?

NOTE: Depending on the printer model and the printing system up to 80 MB of additional software will be installed.

Quit   Yes

Figure 3-9. Activate Printing

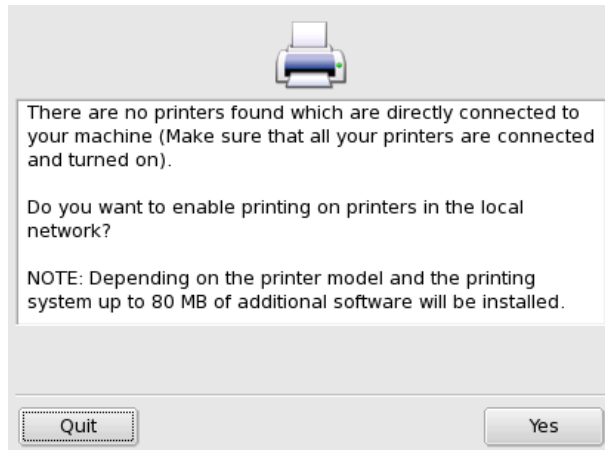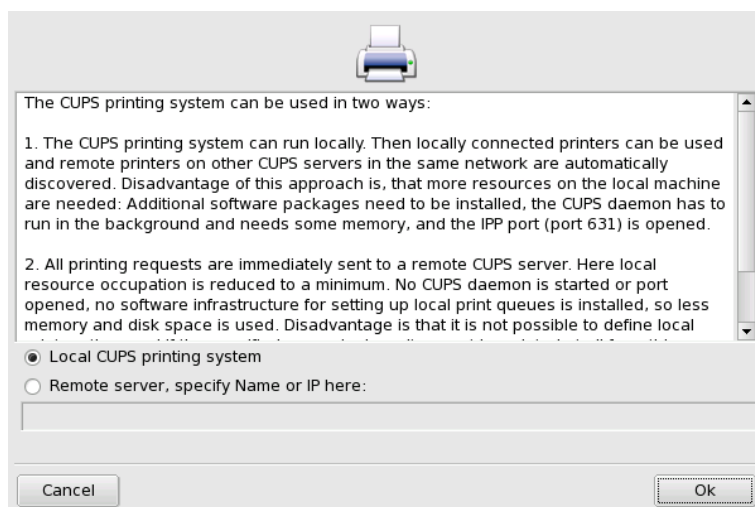The tool did not detect any local printers. However you can print on network printers, or manually install printers which weren't detected by clicking on Yes.

The CUPS printing system can be used in two ways:

1. The CUPS printing system can run locally. Then locally connected printers can be used and remote printers on other CUPS servers in the same network are automatically discovered. Disadvantage of this approach is, that more resources on the local machine are needed: Additional software packages need to be installed, the CUPS daemon has to run in the background and needs some memory, and the IPP port (port 631) is opened.

2. All printing requests are immediately sent to a remote CUPS server. Here local resource occupation is reduced to a minimum. No CUPS daemon is started or port opened, no software infrastructure for setting up local print queues is installed, so less memory and disk space is used. Disadvantage is that it is not possible to define local

◉ Local CUPS printing system
○ Remote server, specify Name or IP here:

Cancel   Ok

Figure 3-10. Activating Network Printers

- Select the Local CUPS printing system option if you wish to configure your machine to act as a print server for either a local printer which was not detected, or a network printer connected to your local network.

  Any required software will be installed and then the main configuration interface (see figure 3-12) appears. Click on Add Printer to install the network printer.

- Select the Remote server option if you wish to be able to print on printers served by another CUPS printing server on the network. Your applications will immediately have access to all public printers served by that

server. You only need to provide the hostname or IP address of that server in the field (ask your system administrator).

When this is done, the main configuration interface (see figure 3-12) appears. The Configured on other machines tab will be filled with the available network printers.

3.6.1.2. New Printer Detected

The following window appears when PrinterDrake detects a new printer.
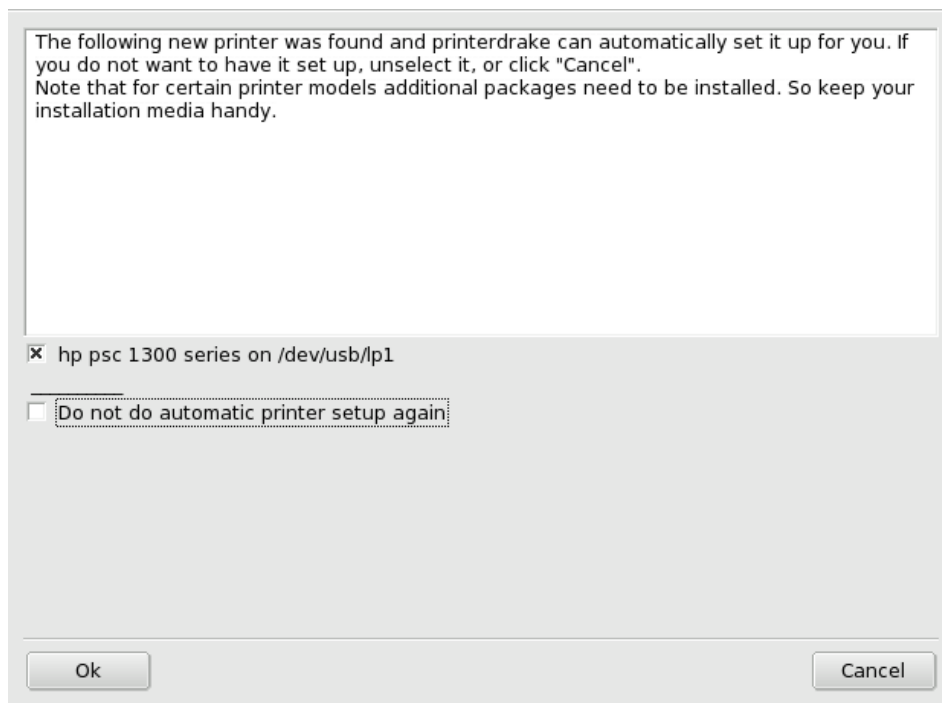
Figure 3-11. A New Printer Is Detected

Simply confirm the automatic installation of the new printer. The main configuration interface (see figure 3-12) is then displayed. Make sure you check that the printer parameters fit your needs (see *Reconfiguring an Existing Printer*, page 37).

3.6.1.3. Printer Configured at System Installation Time

The main configuration interface (see figure 3-12) is shown. Make sure that the printer parameters fit your needs (see *Reconfiguring an Existing Printer*, page 37).

3.6.2. The Printer Management Interface

Use the printer configuration tool's first tab for locally connected printers (Configured on this machine), and the other tab for printers available on your local network (Configured on other machines).

> If your local printer was automatically added you should now verify its configuration. Select it in the list, click on Edit and check the Printer options.
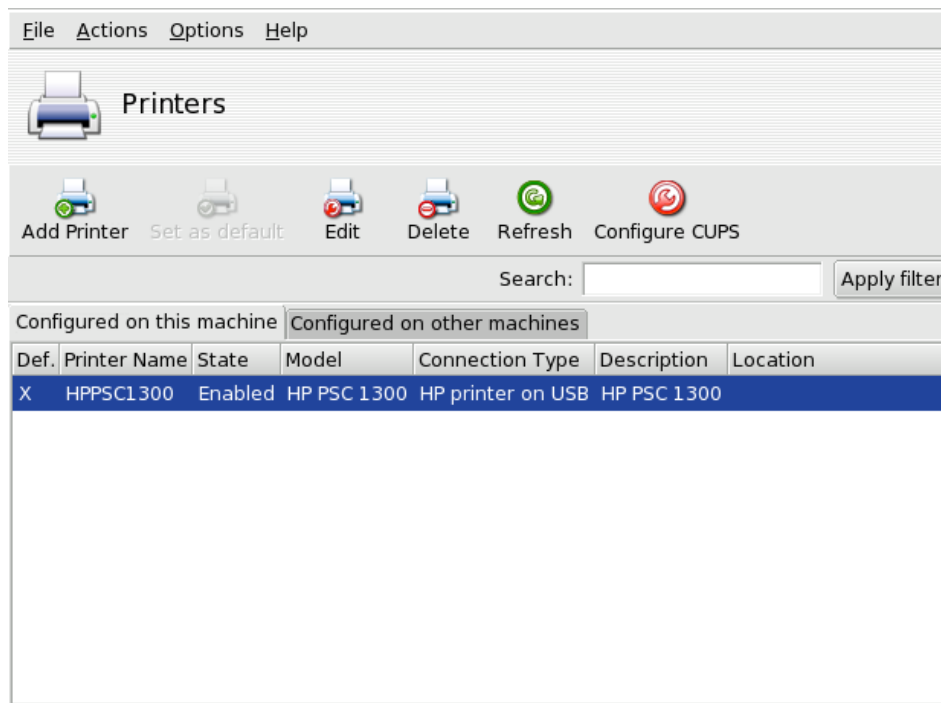
Figure 3-12. Managing Printers

The following buttons give you access to all available maintenance tasks:

- Add Printer: launches the printer configuration wizard described in *The Printer Configuration Wizard*, page 33.

- Set as default: sets the selected printer as the default printer when no specific printer is chosen at print time. A cross appears in the Def. column of that printer.

- Edit: opens the printer configuration dialog described in *Reconfiguring an Existing Printer*, page 37.

- Delete: removes the selected printer from the available printer pool.

- Refresh: updates the list of printers with possible new or removed printers, especially useful for networked printers.

- Configure CUPS: by default, your system is totally open. PrinterDrake uses all of the network's available printers and shares all of its local printers with the local network. Click on this button if you don't want to access network printers, or if you want to restrict the access to your local printers. This dialog also lets you configure access to servers outside the local network.

> The Options→Expert mode menu adds extra features to the tool. See *Expert Mode*, page 38.

## 3.6.3. Print Server General Configuration

The Configure CUPS button allows you to control the behavior of printers connected to your machine and to your network.
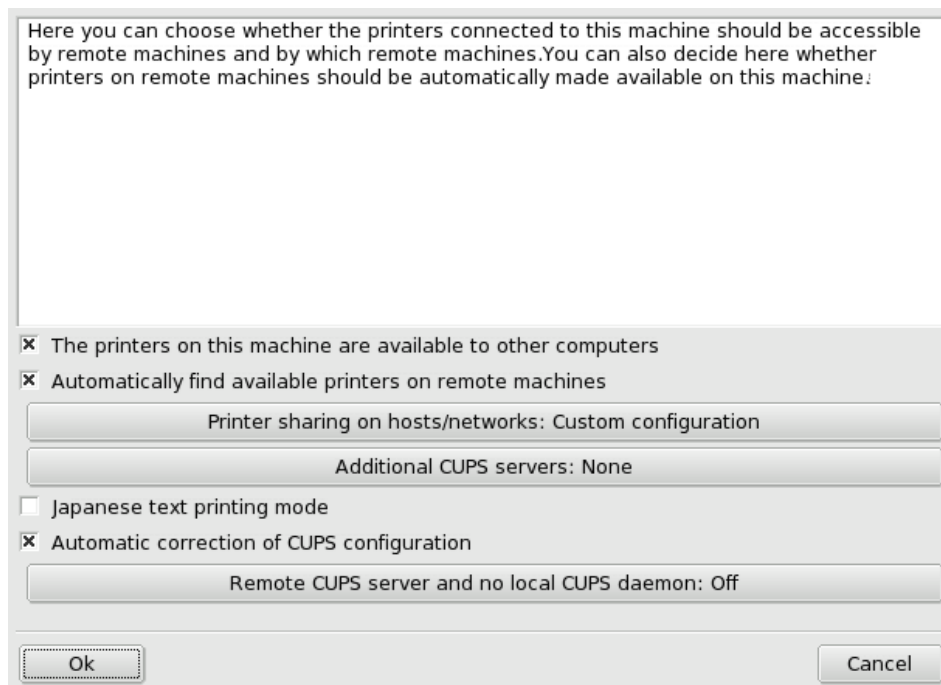
Figure 3-13. CUPS Printer Server Configuration

This dialog enables you to switch between the client and server printing modes through the Remote CUPS server and no local CUPS daemon button.

3.6.3.1. Client Mode
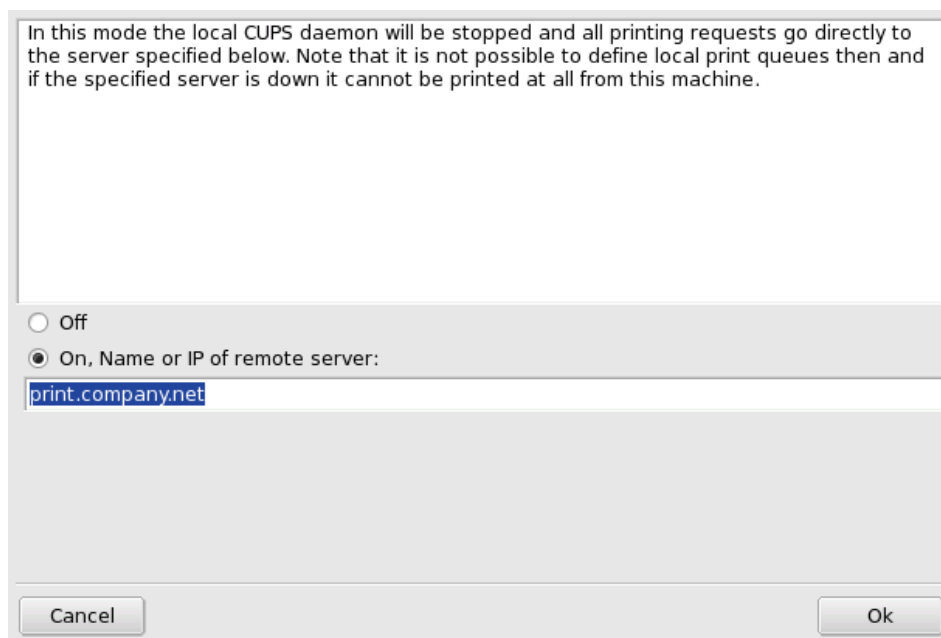
Figure 3-14. Client Mode Configuration

Select the On option to connect to another printer server. You then just need to specify the name or IP address of that server in the field below.

If you choose this mode, your printing configuration is now finished. Accept the options by clicking the OK buttons, and you will be able to check the list of available printers in the Configured on other machines tab of the main interface (see figure 3-12).

3.6.3.2. Server Mode

If you want your machine to access locally connected printers (through parallel or USB ports), or network printers not already configured on another server, you need to select the Off option. Click OK, and you will then be able to fine tune your printer server (see figure 3-13).

A number of options are available to further secure and enhance your print server features:

The printers on this machine are available to other computers

Allows other computers to print on printers configured locally. Remember to restrict access by clicking on Printer sharing on hosts/networks (see below).

Automatically find available printers on remote machines

Tells your print server to automatically make all printers found on other servers available on the local network, as if they were locally connected to your print server. This way your system's users are able to print on any printer the print server "sees". If the remote printers you intend to use are served by a server not on your local network, you can still tell the print server to use them with the Additional CUPS servers button (see below).

Printer sharing on hosts/networks

Allows you to specify from which networks the local printers are made available.

Additional CUPS servers

Allows you to specify one or more CUPS servers to which you can connect and access printers. Specify the IP address and port of the CUPS server in the dialog.

Japanese text printing mode

Replaces the original text filter for one more suited to Japanese texts, but with less features. Use it if you have to print Japanese text-only files.

3.6.4. The Printer Configuration Wizard

Click on Add printer and the configuration wizard comes up.

3.6.4.1. Detecting a Printer

This tools enables the auto-detection of locally connected printers, network printers, and finally printers served by SMB (Windows®) servers. First choose which type of printer you want to add (Local printer, Network printer, Printer on remote lpd server, etc.).
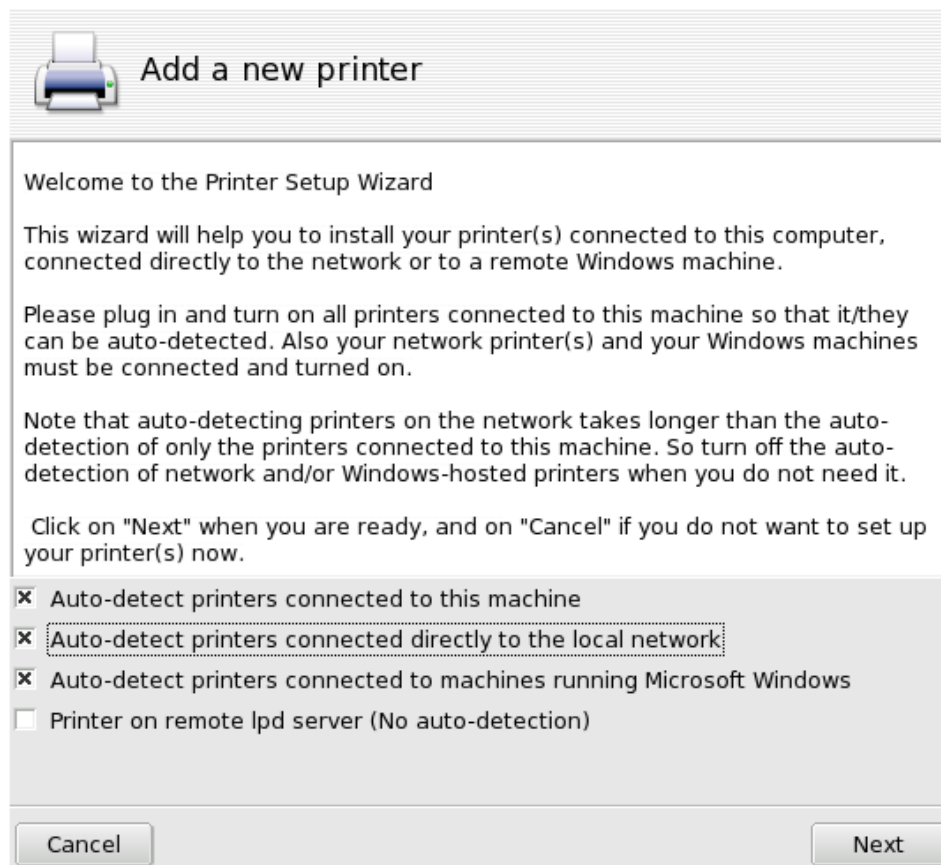
Figure 3-15. Printer Type

Select the printer you want to add from the list. If the detected printer isn't the correct one check the Manual configuration box and proceed with the printer model step (see figure 3-17). If autodetection fails, remove the check mark from all check boxes, click on Next and follow the instructions below.

If you own a multi-function device such as those of HP or `Sony`, an information window pops up and gives you information about your scanner and scanner software (*ScannerDrake*, page 40). Additional packages are also installed.

PrinterDrake displays your printer's model name. Choose Select model manually if it's incorrect. Select the printer you have or a compatible one (see figure 3-16) if yours is not specifically listed.
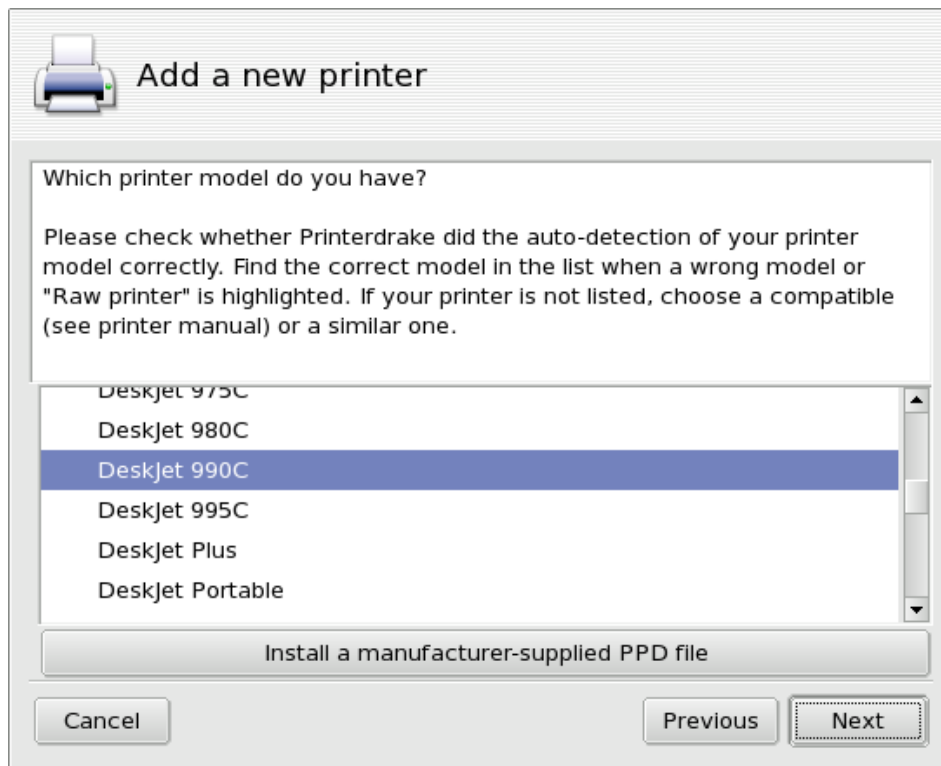
Figure 3-16. Choosing the Printer Model

If you want to install the driver supplied by your printer manufacturer, click on the Install a manufacturer-supplied PPD file button and select the medium containing the PPD file and browse to it. Accept subsequent dialogs to use your chosen PPD file.
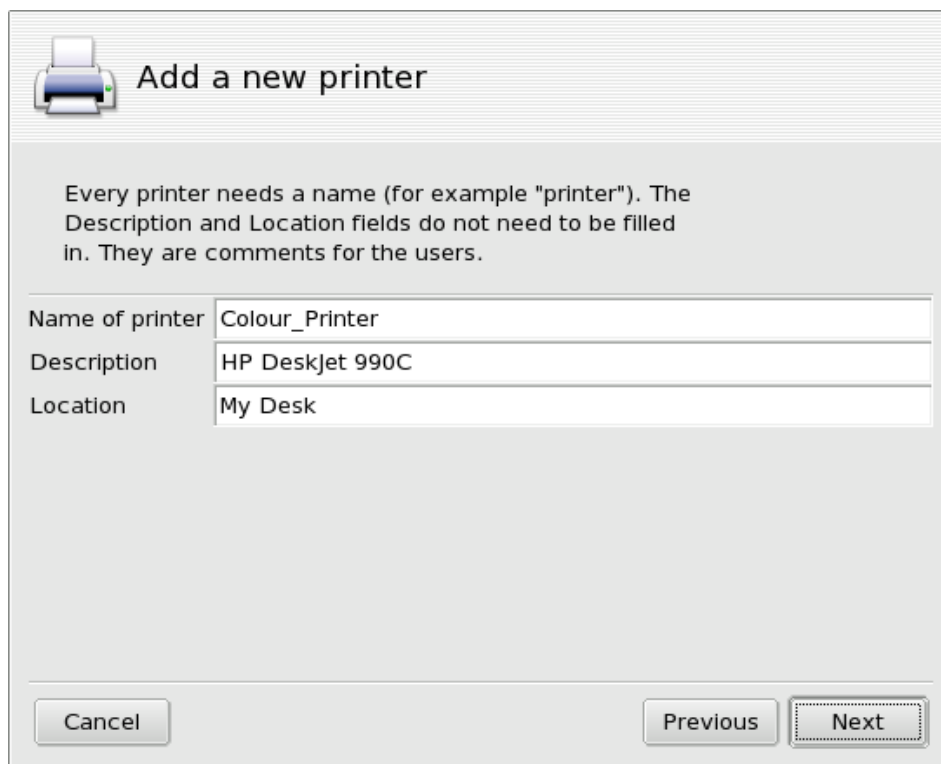
Figure 3-17. Choosing a Name for your Printer

Provide a name for your printer. The printer name must contain only letters, numbers and the underscore ("_") character. It's better to limit its length to 12 characters maximum so that Windows® clients don't have problems when accessing it through Samba.

> If you have one or more configured printers, you are asked whether the printer you are configuring is to be the default printer. If you say No, the previous default printer will be retained.

Finally we strongly recommend that you print a test page in order to make sure everything works as expected.

3.6.4.2. Printing Options

Once the configuration is done, the options associated with the chosen printer are shown (see figure 3-18). It's important you choose the proper settings (such as paper size, media source, etc.) currently installed on the printer. If the settings you choose are incorrect, printing may fail.
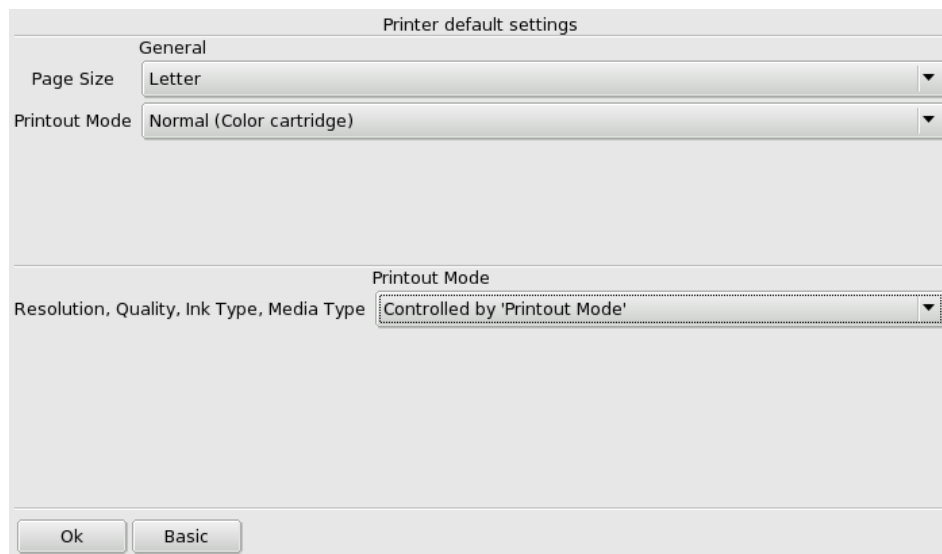
Figure 3-18. Configuring the Printer's Options

> For settings referring to printout quality, bear in mind that higher quality levels may make the printing operation slower and may consume more ink.

3.6.4.3. Printer Test

A few test pages are available (see figure 3-19). We recommend you print at least one test page so you can immediately correct the parameters if something goes wrong. The printer should begin to print almost immediately.
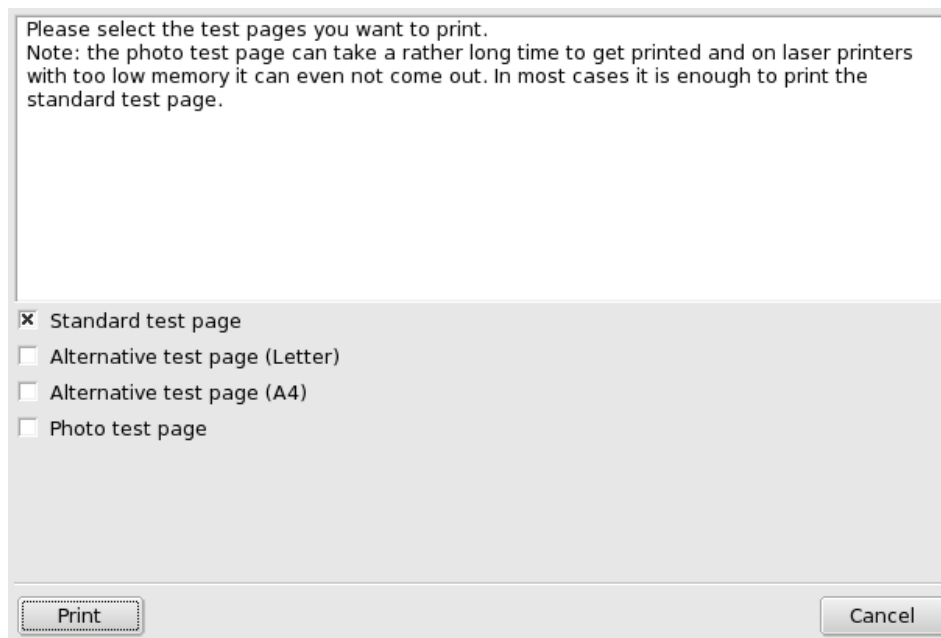
Figure 3-19. Testing the Printer

3.6.4.4. It's Done

If you're not satisfied with your test page, answer the appropriate question with No and you will be led to the printer configuration menu (see figure 3-20) where you can correct the settings. See *Reconfiguring an Existing Printer*, page 37.

Your printer will now appear in the list of available printers in the main window (see figure 3-12).

3.6.5. Reconfiguring an Existing Printer

Double-clicking on a printer's name in the list, or clicking on the Edit button, displays a menu where you can choose actions to take on the selected printer (figure 3-20). Each option gives access to a particular step of the wizard we described above (see *The Printer Configuration Wizard*, page 33). One difference is that the current settings are predefined in all fields, and you may update them where required.
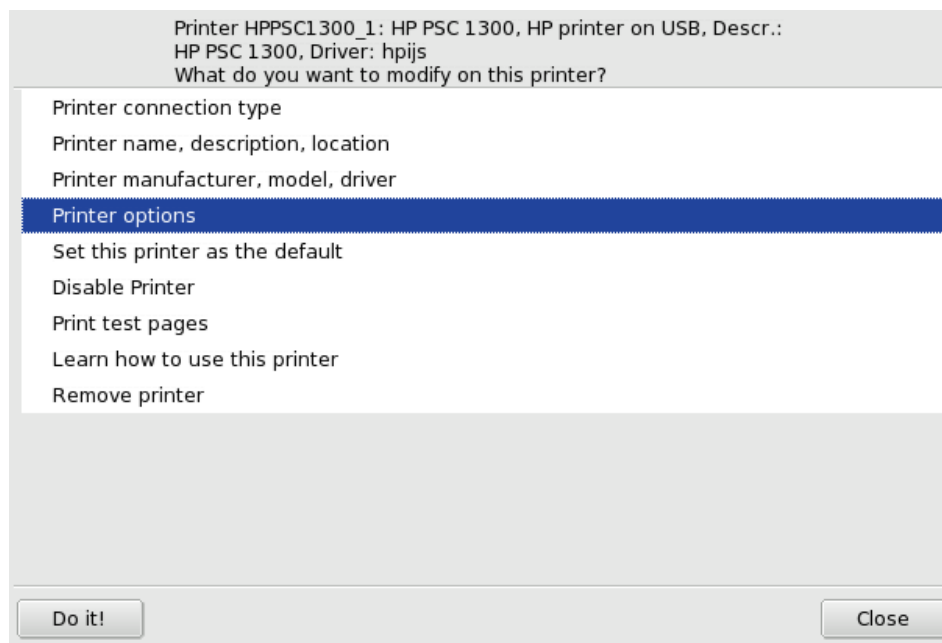
Figure 3-20. Modifying an Existing Printer

There are a few additional options:

1. Disable Printer. Use this option to remove that printer from the printers available to the system's users. You might need to temporarily disable a printer under maintenance so that users don't try to use it in the meantime. When a printer is disabled, that option changes to Enable printer.

2. Learn how to use this printer. Displays information on how to use a particular printer model. In the case of a multi-function device from HP, information about scanning and photo memory card access is also displayed.

3. Remove printer. Deletes that printer's configuration from the system.

Select an action in the dialog and then click on the Do it! button to perform it.

3.6.6. Expert Mode

The expert mode has three additional features:

- **Choose a Different Driver to the Default One for a Printer.** Different drivers are available for the same printer. In expert mode, a third level appears in the printer model selection list (see figure 3-16). It allows you to change each printer's driver.

- **Install Many Kinds of Remote Printers.** This feature enables you to print on remote printers using the LPD protocol, printers on Windows® servers which require authorization, or other arbitrary printer types.

> If PrinterDrake is in expert mode, it doesn't automatically configure new local printers on start-up. Use the Add printer button to configure the printer. However you can choose to Configure Auto Administration from the Options menu to override that behavior.

If you start the new printer wizard in expert mode, there is an additional step at the beginning.

Figure 3-21. Configuring a Remote Printer

Different connection types are available:

- Local printer. A printer directly connected to a parallel or USB port on your computer. In most cases, the printer model will be auto-detected.

- Printer on remote lpd server. A printer already served by another machine on a `lpd` server.

- Network printer (TCP/socket). A printer directly connected to your local network. The network can be scanned and printer models automatically detected provided the Printer auto-detection box is checked.

- Printer on SMB/Windows 95/98/NT server. Relevant for printers already connected to a computer running an OS which serves printers with the SMB protocol, including Samba printers (the necessary Samba components will be automatically installed in this case). The network can be scanned provided the Printer auto-detection box is checked.

- Enter a printer device URI. This option allows you to directly enter the printer's Universal Resource Identifier (URI) on your network. It can be used for any of the above remote connections, and more. This is useful when your system administrator provides you with the printer's URI.

Click on the Modify timeout for network printer auto-detection button to change the default timeout (4000 milliseconds, or 4 seconds) for detection of networked printers. Please bear in mind that the bigger the timeout, the better the chances of detecting remote printers. However the auto-detection process will also take more time.

3.7. Installing and Using Scanners

This section explains how to install a scanner using ScannerDrake, and how to use it with SANE and XSane (scanner interface software). We also present a list of other scanner interface software you could use with GNU/Linux.

Please note that not all scanners are supported under GNU/Linux. Before buying new hardware, remember to check out Mandriva's Hardware Database (`http://www.mandriva.com/hardware`) and the SANE home page (`http://www.sane-project.org/`) for compatibility issues.

3.7.1. Configuring your Scanner

3.7.1.1. ScannerDrake

The ScannerDrake wizard helps you install your scanner. Make sure your scanner is powered on and launch ScannerDrake by clicking on the Scanners entry of the Mandriva Linux Control Center's Hardware section.

The program tries to detect your scanner's manufacturer and model. If it finds one then information about it is displayed in the upper part of the wizard's main window. Other options are also available (figure 3-22):
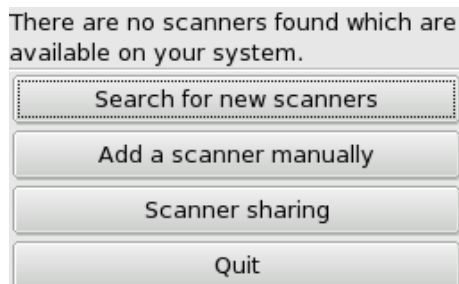
Figure 3-22. Installing your Scanner

Click on Search for new scanners to autodetect a new scanner you just plugged in. Click on Add a scanner manually if the automatic detection fails and look for the specific model you own by browsing through the list of available models.
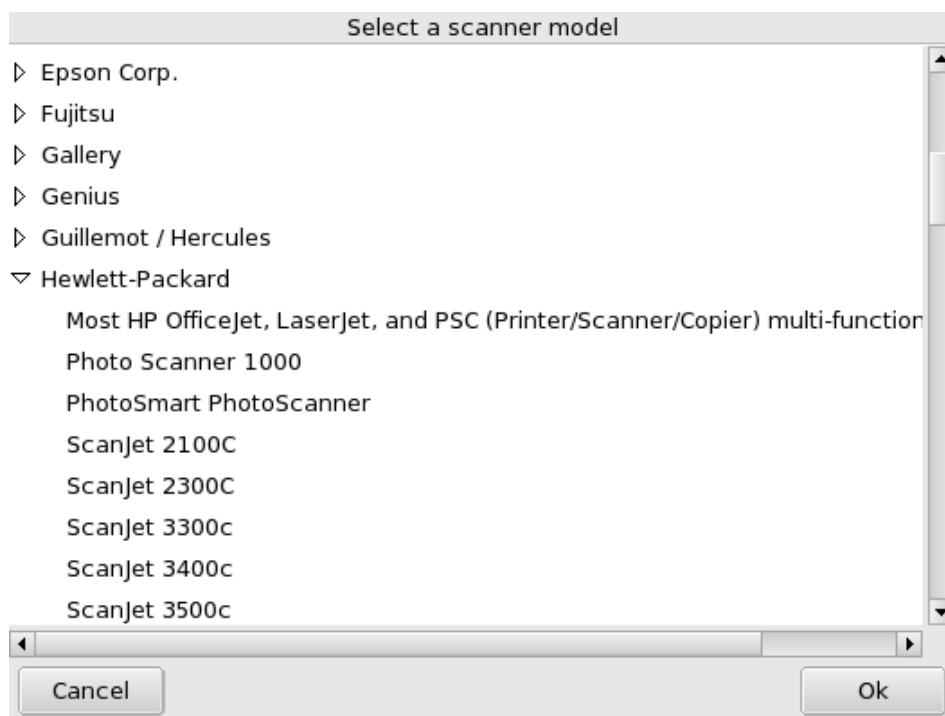
Figure 3-23. The Tree-list of All Known Scanner Models

After choosing the appropriate model, you can leave the default Auto-detect available ports option and click on OK. If you have a parallel port scanner, selecting `/dev/parport0` in the pull-down list should be the right choice.

Your scanner should now be installed and you should be ready to use the programs which come with SANE, XSane or other acquisition software.

Note that HP multi-function devices, such as the OfficeJet and PSC printers, must be configured through PrinterDrake. Please refer to *Configuring Printers with PrinterDrake*, page 28. The scanning part of non-HP multi-function devices can be set up with ScannerDrake as a stand-alone scanner.

To test that everything works correctly, launch xscanimage[1] from a terminal and try to acquire a picture from your scanner. You may first acquire a preview of the scanned image by clicking on the Preview window button, as shown in figure 3-24.
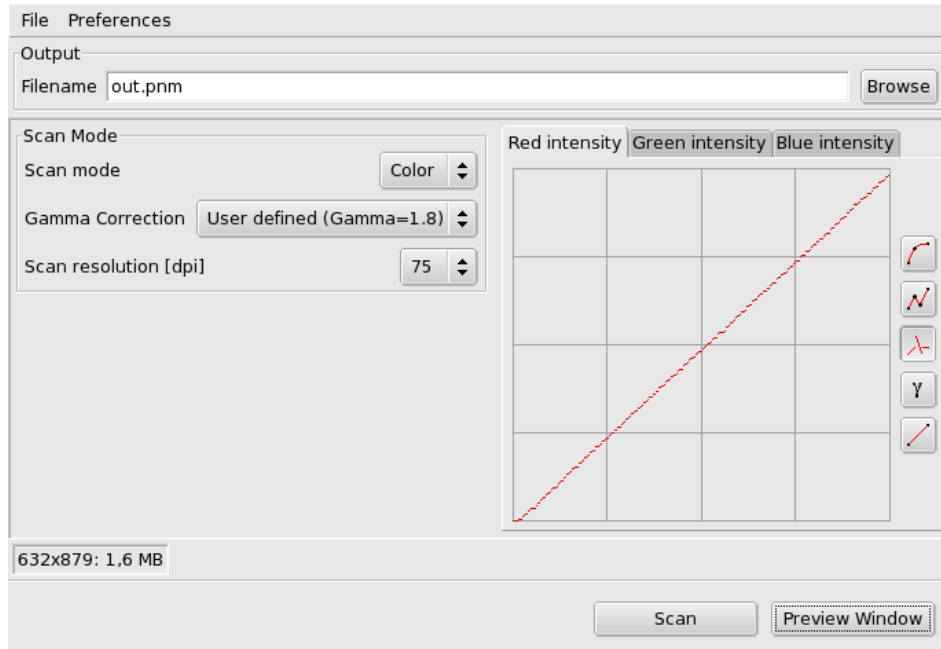
Figure 3-24. Acquiring Images with xscanimage

Note that xscanimage can also be launched directly from GIMP by choosing File+Acquire+xscanimage→Device dialog.

ScannerDrake allows for scanner sharing between users connected via a LAN. Installation is very easy: just click on Scanner sharing and either select The scanners on this machine are available to other computers or Use scanners on remote computers depending on what you want to do. With these buttons you can define which machines are allowed to use your scanners and which remote scanners you want to use.

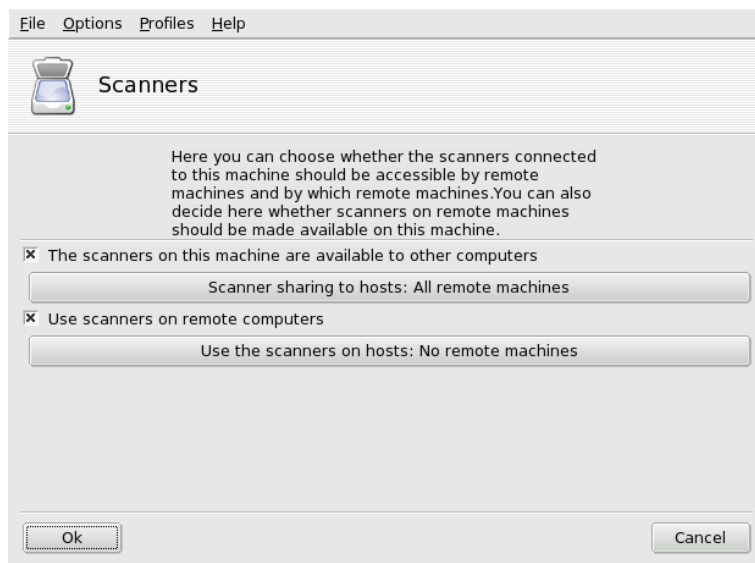1. The `sane-frontends` package must be installed.

File	Options	Profiles	Help

Scanners

Here you can choose whether the scanners connected to this machine should be accessible by remote machines and by which remote machines.You can also decide here whether scanners on remote machines should be made available on this machine.

☒ The scanners on this machine are available to other computers

Scanner sharing to hosts: All remote machines

☒ Use scanners on remote computers

Use the scanners on hosts: No remote machines

Ok   Cancel

Figure 3-25. Sharing Scanners within a LAN

> In order to share your scanner on your LAN, the `saned` package needs to be installed. If it isn't, ScannerDrake will ask you if you want to install it. You also need to set up scanner sharing on the machines from which you want to access the scanner. Check the Use scanners on remote computers box, and then click on Add host. Fill in the information in the Name/IP address of host field for each of the machines which scanners.

3.7.2. Using Image Acquisition Software

3.7.2.1. XSane

While xscanimage is more than enough for your basic scanning needs, more experienced and/or graphic-oriented users will want to use a more sophisticated program. XSane[2] offers more options and a more informative display during the image acquisition process.

You can launch XSane through the Multimedia+Graphics→XSane menu item. Several windows pop up on your screen.

---

2.   The `xsane` package must be installed.
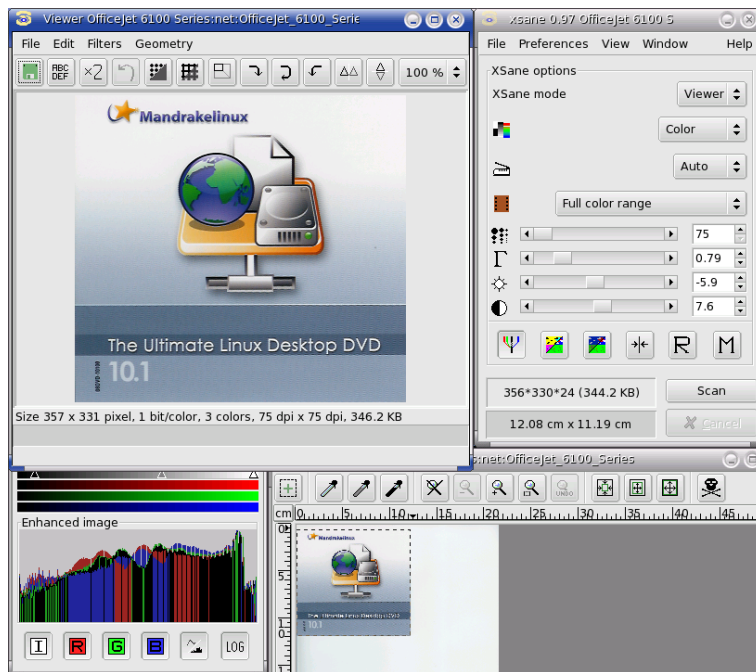
Figure 3-26. XSane Multiple Windows

> If the `xsane-gimp` package is installed, a GIMP plugin will be at your disposal. It allows you to import your images directly into GIMP for image retouching tasks. Choose File+Acquire→XSane: device dialog to launch XSane. You can now scan your image and have it sent directly to GIMP.

3.7.3. Advanced Configuration

3.7.3.1. Fine-Tuning the Resolution

Most modern scanners boast high resolutions, such as 1200, 1600 or 2400 DPI (Dots Per Inch). But it would be a mistake to perform all of your scanning at the maximum available resolution. You will notice very little — if any — quality difference between a 300 and a 600 DPI image scan, but the file size will grow exponentially, up to many MBs of disk space for a single image file.

The resolution value should be chosen according to the device on which the image is to be reproduced. For images to be viewed on computer monitors, e.g. for web sites, the resolution should be close to typical monitor resolution values, between 70 and 100 DPI. Higher values will result not only in bigger images, but the dimensions will also increase, so that an image scanned at 160 DPI instead of 80 will be about twice as large[3].

If you intend to print your images, a resolution of 300 DPI should be enough for most home printers. Increase this value if you have a very high quality printer.

Higher values should be chosen only for specific uses, such as enlarged images on very high quality printers, or quality scans of black and white originals. You will have to experiment a little until you're satisfied with the results.

3.7.3.2. OCR Software

By installing the `kdegraphics-kooka` and `ocrad` packages, you'll be able to use Kooka, a simple graphical front-end to SANE which is also able to perform OCR tasks. To launch it, choose Multimedia+Graphics→Kooka from the main menu.

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3. However scanning at a higher resolution and then reducing the resulting image size using graphic manipulation software such as GIMP is one method often used to obtain better results than directly scanning at the desired final resolution.

First choose the scanning device and then Kooka's main window appears.
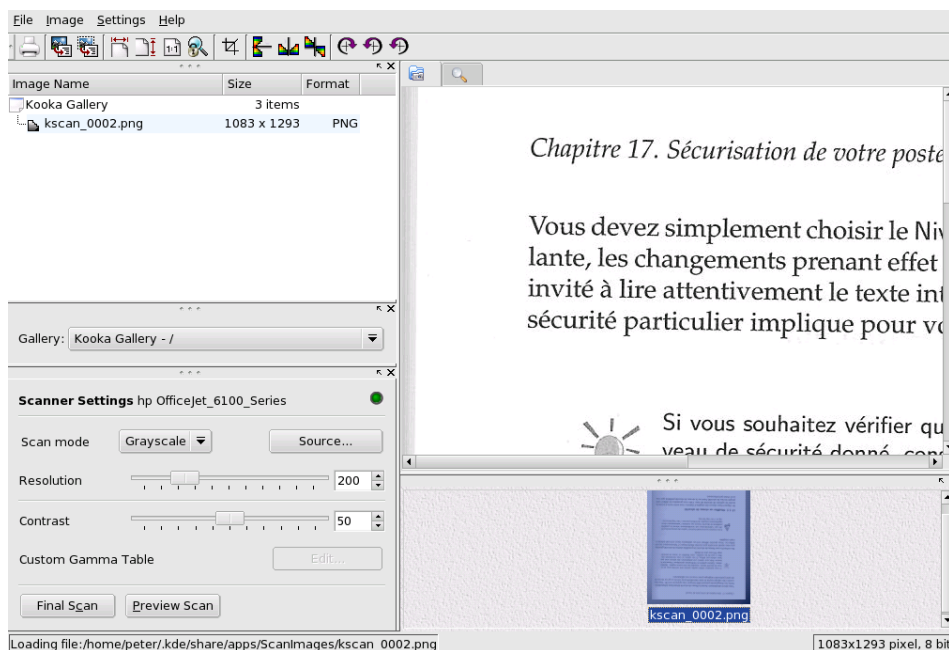
Figure 3-27. Kooka's Main Window

Place the image you want to scan onto your scanner and click on Preview Scan at the bottom left of Kooka's window. For better results, you should choose the Binary Scan mode, and set the resolution to no less than 300 DPI. Then select the part of the image to be scanned and click on Final Scan.

To benefit from Kooka's OCR features, you must configure it. Access the Settings→Configure Kooka menu, click on OCR, and select the OCR engine you want to use.
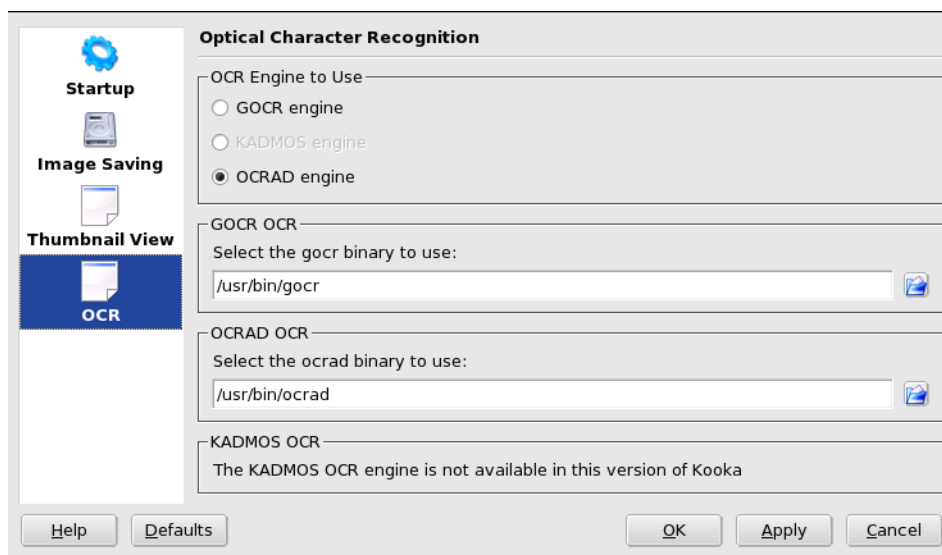
Figure 3-28. Kooka's Configuration Window

Once this is done you can click on this icon (Image→OCR Image) and click on Start OCR. The resulting text will appear along with a spell-correction window.

Kooka is still in beta phase. Although it's possible to make it work properly you will need to adjust its parameters until you obtain a decent rendering. For more information on Kooka please read its handbook (Help→Kooka Handbook).

3.7.4. Other Scanner Interface Software

Here is a list of other scanner interface software which is known to work under GNU/Linux.

- Users of the FLTK ("Fast Light Tool Kit") graphic user interface could try FlScan (`http://freshmeat.net/projects/flscan/`), a FLTK front-end for SANE.

- For EPSON scanners, you could download Image Scan! for Linux (`http://www.avasys.jp/english/linux_e/index.html`), a scanner utility provided free of charge to GNU/Linux users by EPSON KOWA Corporation.

- While multi-functional HP devices are configured using PrinterDrake, owners of these devices should have a look at the HP Linux Inkjet Project (`http://hpinkjet.sourceforge.net/`). The developers involved in the project aim at providing GNU/Linux support for most Hewlett-Packard OfficeJet, PSC, LaserJet, and PhotoSmart printer multi-function peripherals (MFPs).

3.8. Setting up your UPS

The role of a UPS (Uninterruptable Power System) is to provide you with electrical power whatever happens. A UPS enables you to continue working for a certain amount of time due to its battery (usually up to 10 minutes depending on the model) even if there's a power outage in your area. Its main function, however, is to allow you to save your data and to cleanly close your machine, minimizing and even avoiding data corruption and loss.

Open the Mandriva Linux Control Center in the hardware section and click on Set up a UPS for power monitoring to launch DrakUPS.
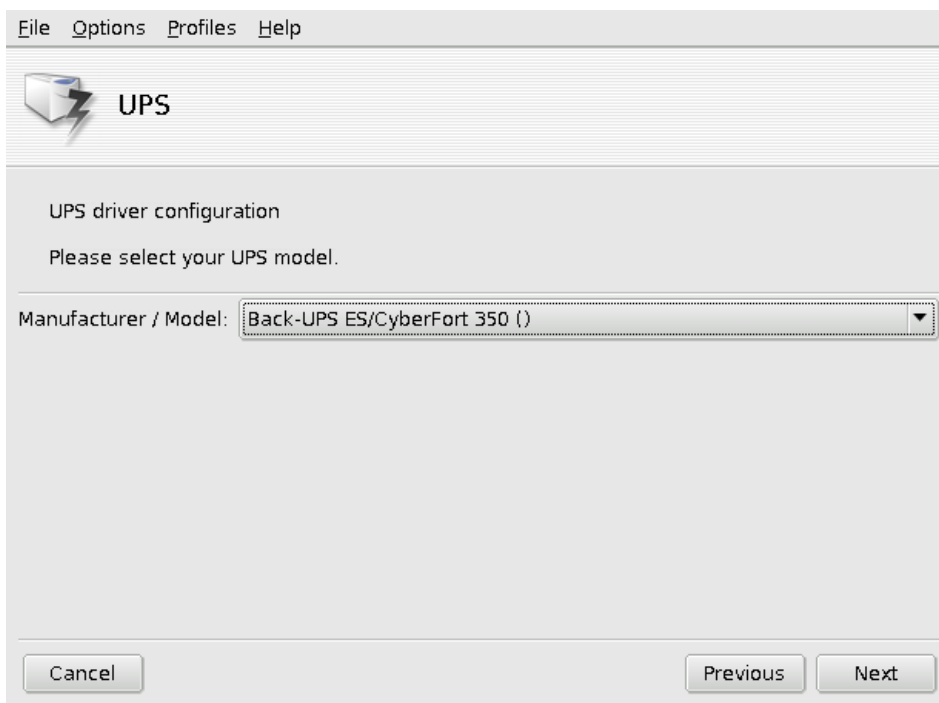
> The `nut-server` ("nut" stands for Network UPS Tool) package needs to be installed.
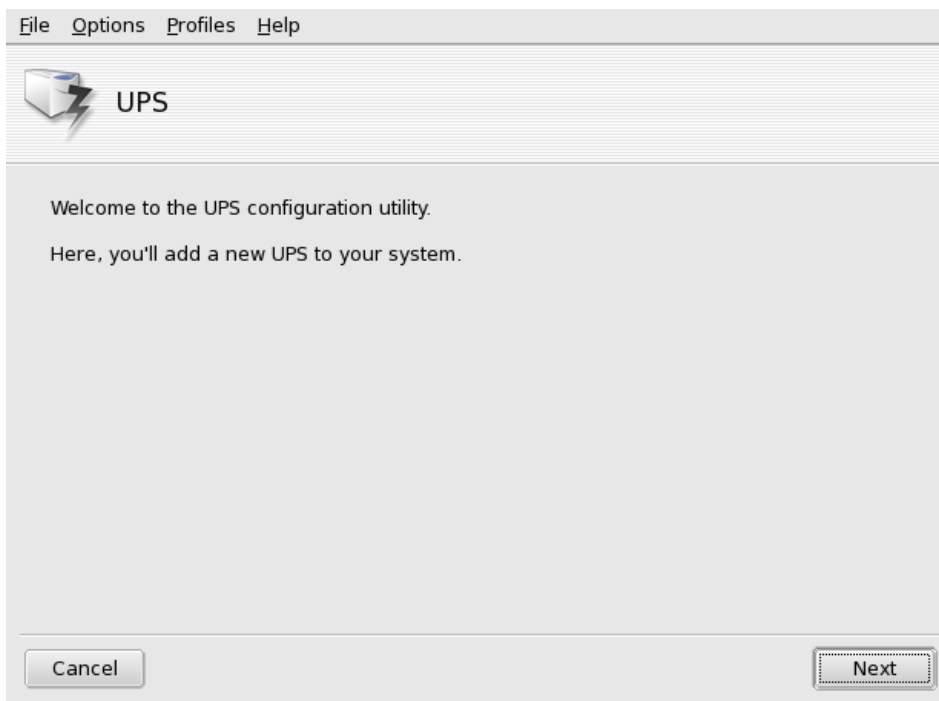
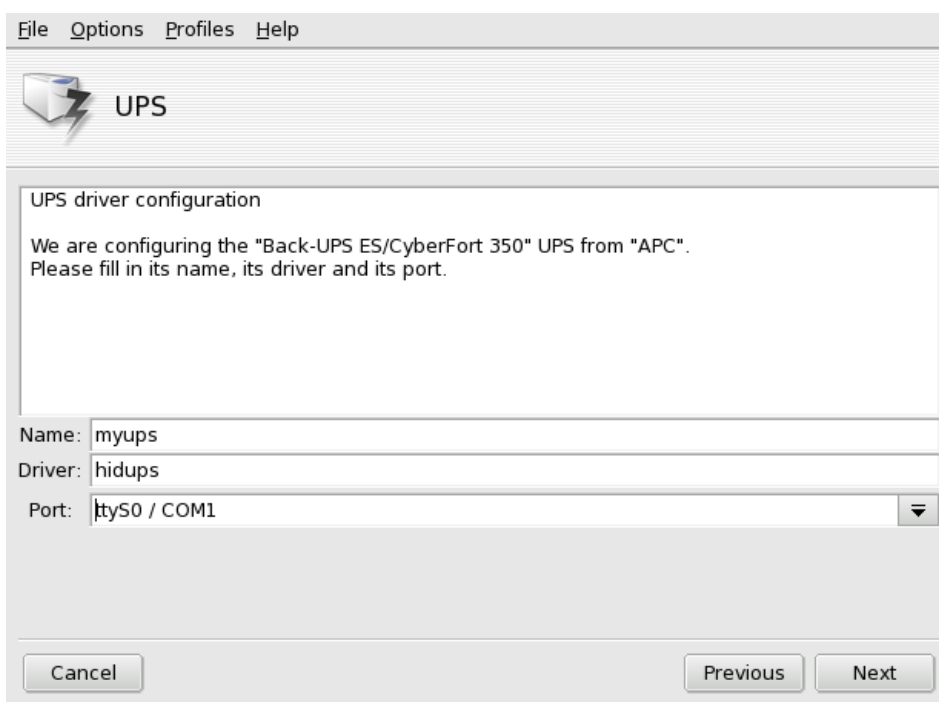

Figure 3-29. DrakUPS Setup

Next let DrakUPS autodetect your UPS. If all goes well you should get a congratulation message. If not try to do it manually.

Select your UPS in the list of manufacturers and models.

Figure 3-30. Selecting the Manufacturer and Model

Then assign a Name, Driver, and Port[4].

Figure 3-31. Name, Device and Port Names

If all went well your UPS should now be configured and ready to help avoid bad power outage surprises.

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4. The Name and Driver fields should automatically be filled. Of course, you can change its name but we recommend you keep the driver name.

Chapter 4. "Network & Internet" Section

4.1. Network and Internet Connection Management

Before connecting to the Internet, you are encouraged to set up a firewall on your machine so as to avoid bad surprises such as intrusions on your system. You can set up a very simple, yet effective, firewall using DrakFirewall. Please refer to *Securing your Internet Access via DrakFirewall*, page 90 for more information.

The drakconnect set of tools allows you to easily configure your network access, whether it be to the *Internet* or to a local network. Open Mandriva Linux Control Center and select the Network & Internet section to access drakconnect tools. A view of the main interface is shown in figure 4-1. The Internet connection sharing tool is described in *Internet Connection Sharing*, page 54.
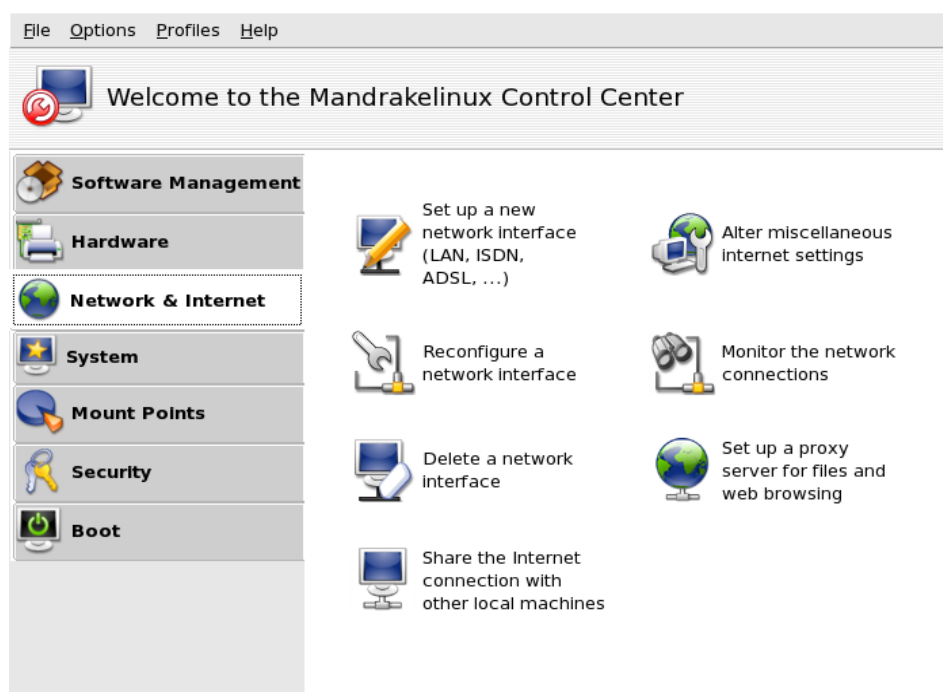

Figure 4-1. DrakConnect Tools

4.1.1. Set Up a New Network Interface

drakconnect supports different types of Internet and network connections. The first step consists of choosing which type of connection you wish to configure. Always make sure you have all the information provided by your ISP or network administrator at hand.

4.1.1.1. LAN Connection

Select the LAN connection type and continue to the next step. Your NICs are detected automatically; if you have more than one, you have to select the one you wish to configure. You can also load a driver for your NIC manually.

Then, you have to specify if the network parameters will be automatically set up (Automatic IP (BOOTP/DHCP)) or not (Manual configuration): fill the next steps with the parameters which your ISP or network administrator gave you. An example of the manual configuration of IP parameters is shown in figure 4-2.

Figure 4-2. Setting Primary Static LAN Connection Parameters

> Check the Network Hotplugging box to have your network brought up and down automatically when you connect and disconnect the network cable. This is specially handy for laptop users.

Following the static IP example, you have to specify the rest of the parameters, namely the hostname, DNS server IP address(es) and the IP address of the machine giving you access to the Internet, known as the gateway (see figure 4-3).

Figure 4-3. Setting the DNS and Gateway IP Addresses

If you configure the network with DHCP you can optionally provide the machine's hostname. Then you can supply the Zeroconf hostname: this is the name which will be assigned to the machine when no network configuration has been found.

After the configuration is done, you can bring the network connection up or down as described in *Monitoring Connections*, page 53. Please bear in mind that LAN connection types are set up to always be started at boot time.

An applet appears in the desktop's panel indicating that the connection is up

or down

. Right click on it to access a menu that will also let you control the connection's state as well as other parameters.

4.1.1.2. Wireless Connection

This entry allows to configure WiFi PCMCIA or PCI devices.

1. Choose the card you wish to configure. If your card is not listed, choose the Use a Windows driver entry. The next step then asks you to select the driver from the manufacturer's card drivers CD.

2. Network configuration is then similar to the LAN connection type (see *LAN Connection*, page 47).

3. Finally some wireless specific parameters are asked, make sure to set them correctly according to your wireless access point configuration.

4.1.1.3. ADSL Connection

You will be asked which device your ADSL modem is connected to, select it and click Next.

You will then see a list of countries/ISPs. If yours is listed select it: most of the following parameters will be automatically set. If your ISP is not listed, select the Unlisted - edit manually option, click on Next and fill the parameters with the settings provided by your ISP.

You have to specify the connection type. The following options are available:

- DSL over CAPI. CAPI means Common ISDN Applications Programming Interface. This communication API was mainly used for ISDN but is now also used for ADSL.

- Dynamic Host Configuration Protocol (DHCP). This is the usual cable-modem connection type used by ISPs for ADSL. The rest of the configuration is the same as the one explained in *LAN Connection*, page 47 (automatic configuration option).

- Manual TCP/IP Configuration. This is rarely needed, but it is provided for flexibility. The rest of the configuration is the same as the one explained in *LAN Connection*, page 47 (manual configuration option).

- PPP over ATM (PPPoA). A protocol which encapsulates PPP frames in an ATM adaption layer (AAL5). A common ADSL connection type, used mainly with USB ADSL modems.

- PPP over Ethernet (PPPoE). A protocol which encapsulates PPP frames in Ethernet frames. The most widely used ADSL connection type. If unsure about yours, try this one first.

- Point-to-Point Tunneling Protocol (PPTP). It is Microsoft's variation of PPP, used by some ADSL providers. It is not considered a very secure protocol, and it's not a RFC standard.

Figure 4-4. Setting the ADSL Connection Parameters

All the PPP types need at least a user name and a password. Here you can also specify the DNS servers, if needed (see figure 4-4). The required packages will be installed.

> Click on the Advanced button to be able to specify the VPI (Virtual Path ID) and VCI (Virtual Circuit ID) numbers if needed.

You are then asked whether or not to bring the connection up at boot. Since ADSL connections are of the "always up" type, you can safely select Yes. Finally you can test the connection: we strongly recommend you to do so, to make sure all parameters are accurate.

4.1.1.4. Cable Connection

Some cable ISPs need you to authenticate. If this is your case, select the Use BPALogin option. If you are unsure or don't know, it is safe to select the None option.

Your NICs will be detected automatically. If you have more than one, you will have to select the one you wish to configure. You can also manually load a driver for your NIC.

The rest of the configuration is very similar to the one described in *LAN Connection*, page 47. Make sure you have all needed parameters provided by your ISP handy.

4.1.1.5. ISDN Connection

Simply make sure you select the right parameters in all steps, concerning your area and provider.

The last step gives you the option to handle the connection status through the net applet, this can prove useful if you only need the Internet connection from time to time.

4.1.1.6. Modem Connection

A list of detected modems is shown. If no modem was detected then only the Manual choice option is shown, click on Next and choose the communications port the modem is connected to. The required packages will be installed.

You will then see a list of countries/ISPs. If yours is listed select it and continue to the next step: some parameters (connection name, phone number to dial, and authentication scheme) will be automatically set. Verify them, add the missing ones and accept them. If yours is not listed, select the Unlisted - edit manually option, click on Next and fill the parameters with the settings provided by your ISP (see figure 4-5).

Figure 4-5. Entering Dial-up Connection Parameters

All parameters should be obvious, except for the authentication type. The value in the Authentication pull-down depends on what your ISP supports: Script-based (an old type of authentication method based on "expect" and "send" types of chat between your system and your ISP); Terminal based (a terminal window will pop up when the connection is made and you will have to login interactively); PAP, CHAP, or PAP/CHAP (authentication information exchange protocols, CHAP is preferred because it is more secure, PAP/CHAP will automatically choose the supported one).

Then come the IP, DNS and gateway settings. Nowadays, most ISPs provide them automatically when a connection is made, so selecting the Automatic option on them is usually a safe bet. You will then be asked whether you wish to allow users to start the connection. The safest choice is No. Otherwise any user will be able to take the link down, therefore disconnecting every other user.

During the next step you will be asked whether to start the connection at boot time or not: it is probably safer and cheaper to choose No. Finally you will be asked to test the connection: we recommend you to do so to make sure all parameters are accurate. You can now control your Internet connection using the net applet. You can also use the kppp remote access connection dialer (package kppp) through the main menu: Internet+Remote Access→KPPP

4.1.1.7. DVB Connection

This connection type is used for satellite connections.

1. Choose the connection card you wish to configure, and then the adapter settings.
2. Network configuration is then similar to the LAN connection type (see *LAN Connection*, page 47).
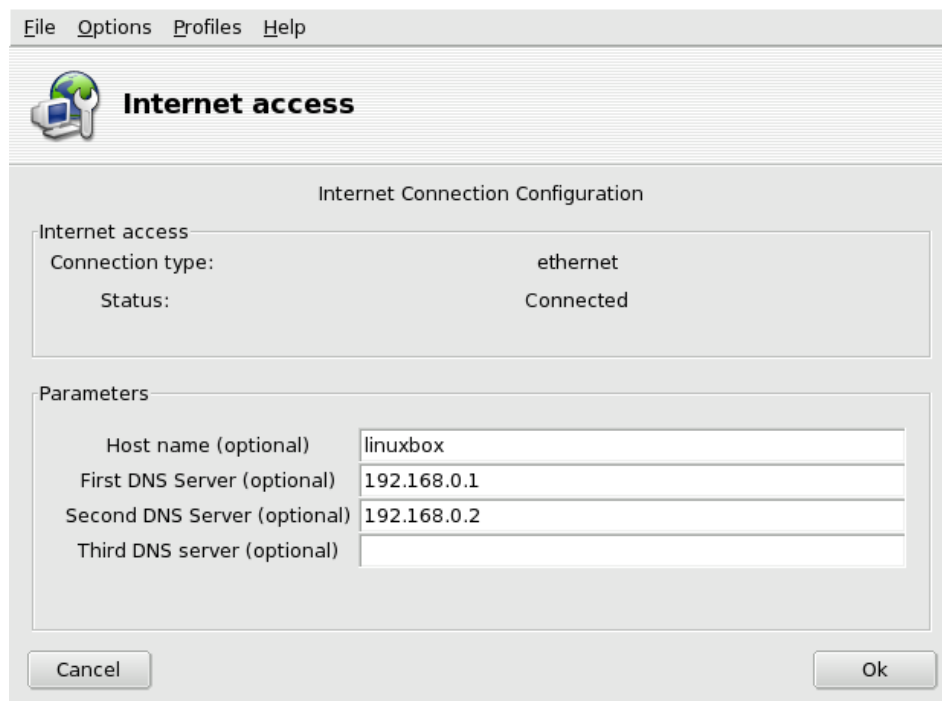
4.1.2. Internet Settings

Figure 4-6. Configuring the Internet Access

This tool allows you to specify Internet access parameters if they need to be modified after your initial configuration. Please bear in mind that these parameters are system-wide and apply to all interfaces.
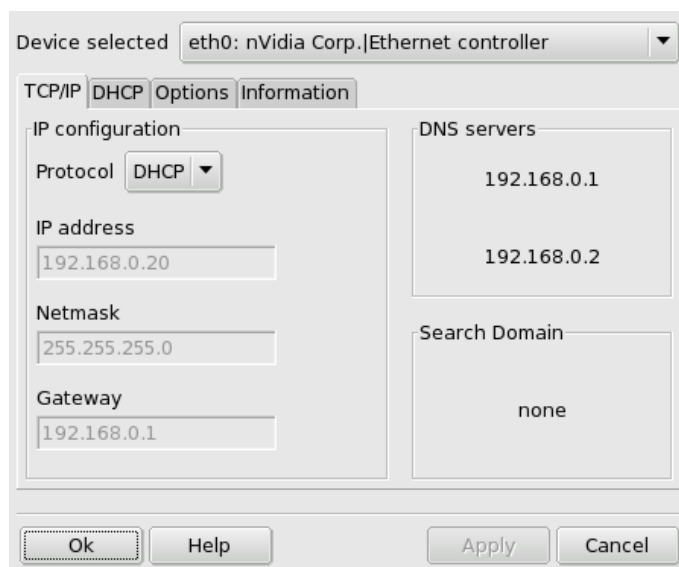
4.1.3. Reconfigure Interfaces

Figure 4-7. Manage Network Connections

This tool permits you to modify network interface-specific parameters, after you have set them up through the new interface wizard (see *Set Up a New Network Interface*, page 47). Use the drop-down list at the top to select the interface you want to configure. The tabs allow you to change parameters and options according to the network interface type selected.

This interface can be brought up by users through the net applet to monitor traffic.
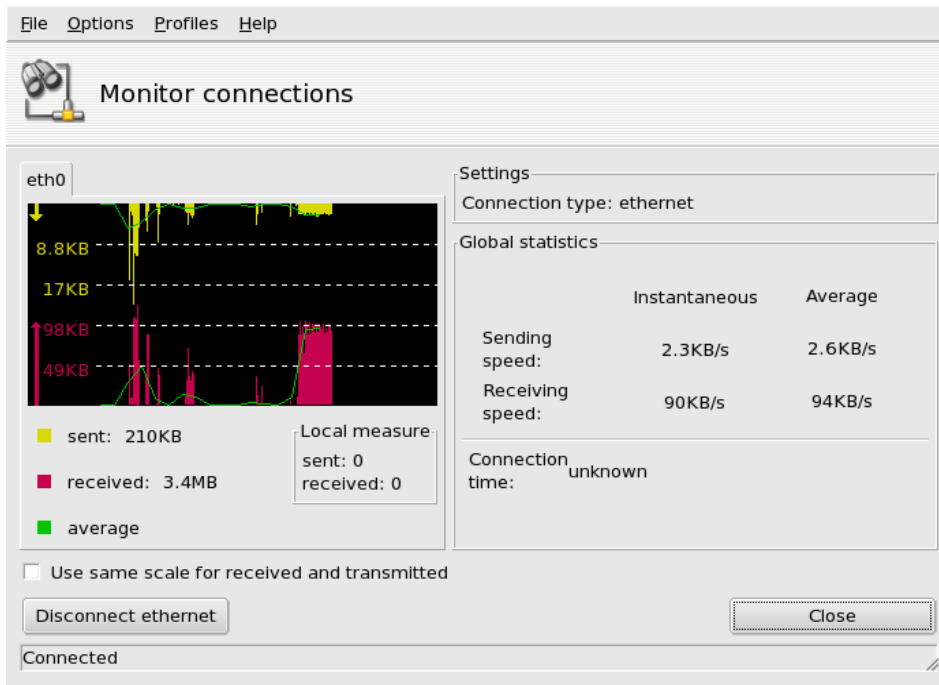
4.1.4. Monitoring Connections

Figure 4-8. Real-Time Network Connection Monitoring

This tool shows the network interfaces activity. You can specify some options for the traffic graphic and statistics: update interval, scale, etc (see figure 4-8). It can also be used to control the status of the network connection, bringing it up or down using the button at the lower left.

4.1.5. Removing a Connection

This tool simply allows you to remove a network interface. Select the interface to be removed in the Net Device pull-down list.

You will not be asked for confirmation. Once an interface is selected for removal, pressing the Next button deletes it immediately.

4.1.6. Proxy Settings

This tool allows you to define the hostnames or IP addresses of proxies for the FTP and HTTP protocols your computer will use. Fill the fields with the required values and click OK.

A proxy is a server which retrieves information from the Internet on your behalf, keeping a local copy of the web pages which are most frequently requested. They are referred to as "caching proxies", and optimize bandwidth usage. In some organizations, you cannot access the Internet directly. You must pass through a proxy which authenticates you before allowing you to connect to the Internet. This is usually combined with a firewall which only guarantees the proxy direct access to the Internet. They are referred to as "authentication proxies". In corporate or business environments, proxies perform both caching and authentication functions for performance and security reasons.

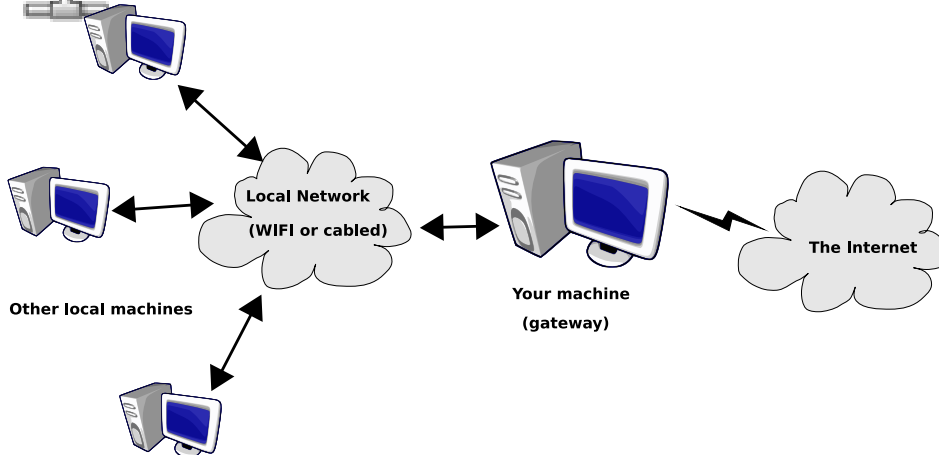### 4.1.7. Wireless Connection Management

This tool shows the wireless networks currently available allowing you to switch between them.

4.2. Internet Connection Sharing

This tool configures your system so that it acts as a gateway to the Internet for other machines connected to it via a LAN. This is very useful at home for example, if you wish all computers to access the Internet through the same Internet link.

Figure 4-9. A Simple Gateway Configuration

The overall procedure is the following:

1. Configure your Internet access (*Network and Internet Connection Management*, page 47). In order for your machine to act as a gateway, you will need an already configured and working connection to the Internet, plus a network connection to your LAN. This implies at least two interfaces, for example, a modem and an Ethernet card.

2. Setup the gateway (*The Gateway Connection Wizard*, page 54).

3. Configure the other local machines as clients (*Configuring the Clients*, page 55).

This wizard will also configure a firewall to block most connections from the Internet. You are encouraged to check that the firewall configuration (*Securing your Internet Access via DrakFirewall*, page 90) suits you after completing the wizard.

After you complete this wizard, all computers on the LAN will be able to access the Internet. Their configuration will be automated due to the DHCP server which will be installed on your gateway, and the web access will be optimized due to the use of the Squid transparent proxy cache.

4.2.1. The Gateway Connection Wizard

These are the steps that the wizard takes:

1. Choosing the Internet Interface

   You first need to specify the name of the interface connected to the Internet. Make sure you select the correct one: use the examples in the on-line help as a guide.

2. Choosing The LAN Network Adapter

   If you have more than one Ethernet interface, and depending on what you chose as your Internet interface, the wizard might ask you to select the one connected to your LAN. Make sure you select the correct one.

Note that all traffic to and from this network passing through the gateway will be masqueraded, that is: it will appear to come from the gateway instead of from the LAN.

3. Local Area Network Settings
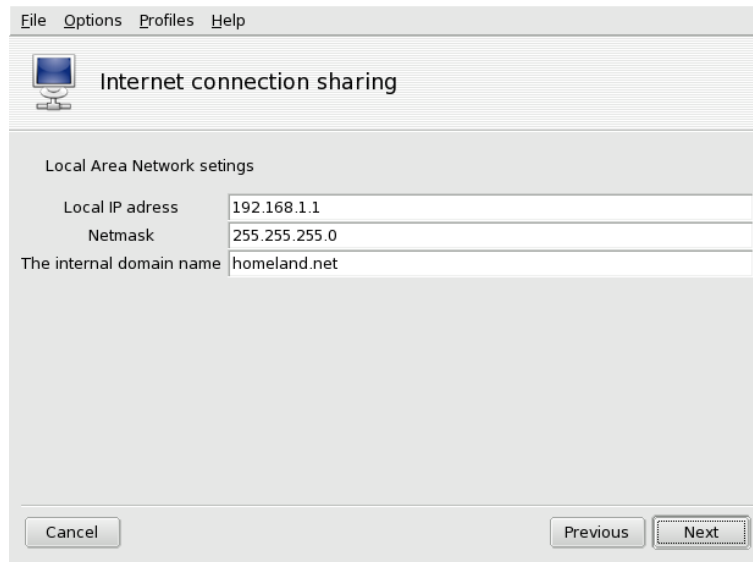
Figure 4-10. Configuring The LAN

At this point, if it is the 1ˢᵗ time the system has been configured as a gateway, the wizard proposes default parameters for the new local network to be managed. Check that these values are not already in use in your network, and go on to next step.

Otherwise, the wizard will first offer to reconfigure the LAN interface so that it will be compatible with the gateway services. It is recommended that you leave the default options and click on Next. Then, all the software needed will be installed.

4. DNS Configuration

If you plan on having a local name server on your machine, you can check the box. Otherwise you can choose to use the name server of your provider. If you don't know what a name server is, leaving the box checked is safe.

5. DHCP Server Configuration

Installing a DHCP server on your machine will allow all client machines to have their network configuration automatically done. Otherwise you will have to configure each of the clients by hand: IP address, network, gateway, DNS.

6. Proxy Caching Server (SQUID)

A caching server records the Internet pages requested by local browsers. Then if the same page is asked for again by someone else, it'll be able to serve it without needing to retrieve it again from the Internet, thus saving bandwidth, and improving response time. This is very useful for many clients.

The application used to perform this task is Squid (`http://www.squid-cache.org/`).

When the wizard is completed, any required packages are installed and configured.

4.2.2. Configuring the Clients

Configuration of the clients mainly depends on whether you chose to install a **DHCP** server on your gateway or not. By configuring the clients on the local network to use DHCP, they will automatically use the Mandriva Linux machine as a gateway to the Internet. This works for Windows®, GNU/Linux and any other OS which supports DHCP.

If you have no DHCP server, you will have to configure each of your machines manually, according to the network settings configured during the connection sharing wizard.

For DHCP, on a Mandriva Linux client system, make sure you selected DHCP in the Protocol pull-down list when configuring the network as shown in figure 4-11.
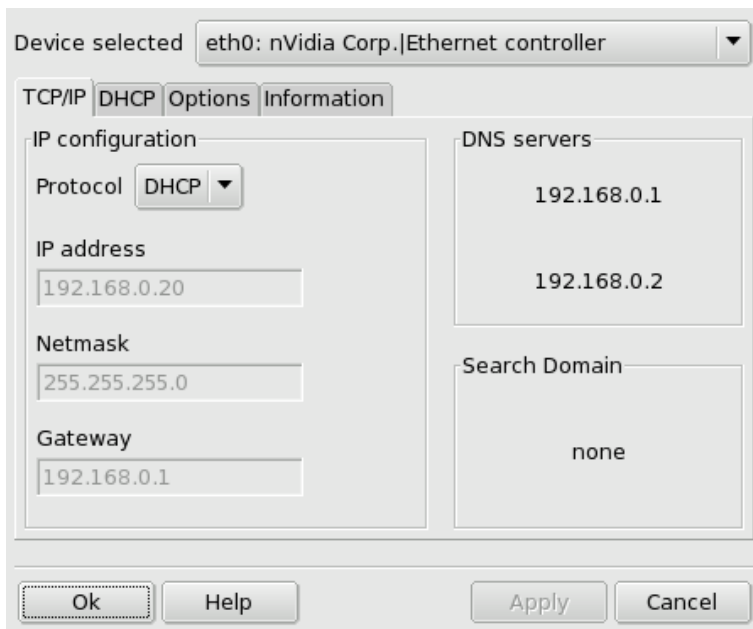

Figure 4-11. Configuring a Client to Use DHCP

Chapter 5. "System" Section

5.1. Customizing your Menus with MenuDrake

In order to help you manage the main menu of your preferred graphical interface, Mandriva Linux provides you with a menu editor which ensures menus from all desktop environments (such as KDE or GNOME) are coherent.

This tool allows system administrators to control the menus for all users (the system menu) but can also be utilized by users to personalize their own menus. You can launch MenuDrake from the Mandriva Linux Control Center or from the System+Configuration+Other→Menudrake menu entry.

Figure 5-1. Launching MenuDrake in System or User Mode

If started by `root`, MenuDrake can be used in two different modes: either changing menus for all users, or customizing the menus for user `root`. You will be able to switch from within the application thereafter, but for now, click on:

- System menu to make changes to menus available for all system users;
- Root menu to customize the menus for the `root` user only.

When you launch MenuDrake, it first scans your current menu structure and displays it. The main window (see figure 5-2) is divided in two parts: the menu itself on the left, and a form relative to the highlighted menu item on the right.
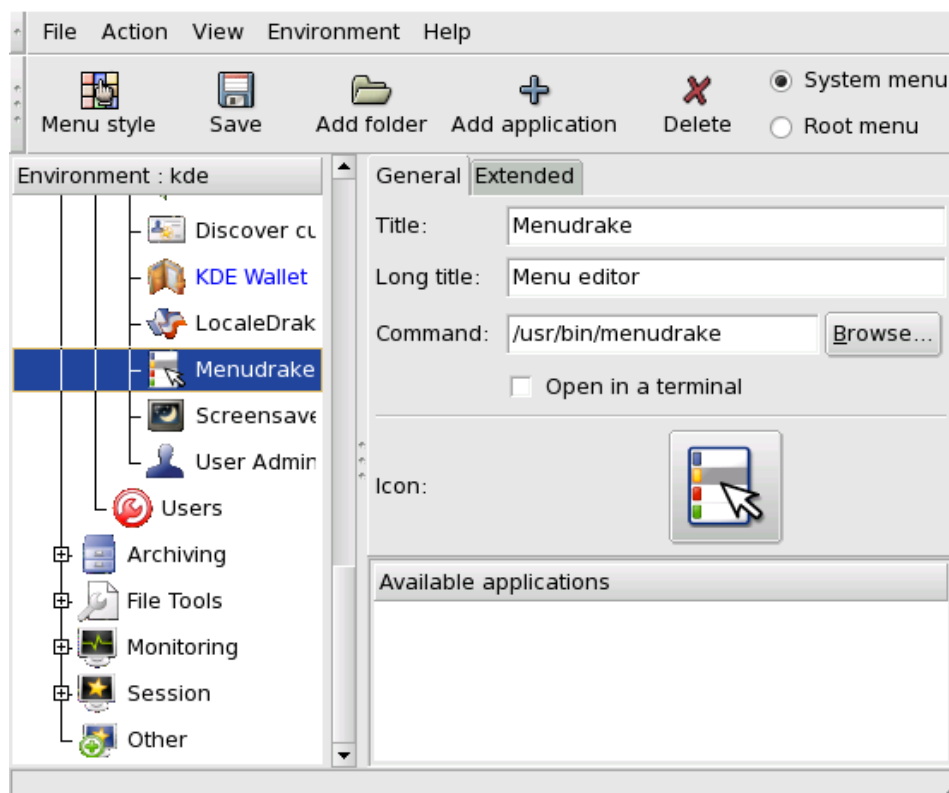
Figure 5-2. MenuDrake's Main Window

You can click on the tree's [+] signs to view the content of the related sub-menus, and on [-] to hide them.

> In your tree you may see entries which do not appear in your actual menu. These are empty directories which are not displayed but can be used for future applications which you may wish to install.

5.1.1. Adding a New Menu Entry

This should seldom happen as all Mandriva Linux graphical applications should provide a menu entry. However if you want to add a menu entry for a package you compiled yourself, or for a console mode program, use this function. Let's suppose you want to run the `top` command in a terminal window to view running processes and the utilization of system resources through a menu entry in the System→Monitoring menu.

Select the System→Monitoring entry, and click on the tool bar's Add application button. A dialog will appear asking you for the title of the menu entry and the command associated with it.
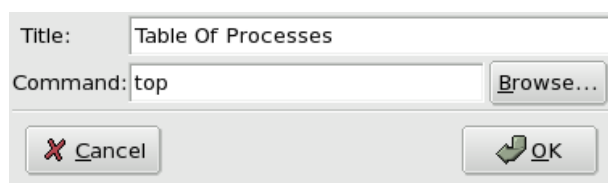
Figure 5-3. Adding a New Menu Entry

Edit the title (you could insert "Table Of Processes") to be shown in the menu. Then you need to provide the action the system should execute in the Command field: **top**. Click on OK and the entry will be added to the menu tree.

You can also choose an icon for your entry from the list which appears once you click the icon button itself. The new entry is shown in figure 5-4. Do not forget to check the Open in a terminal box to have the program run in a terminal window.
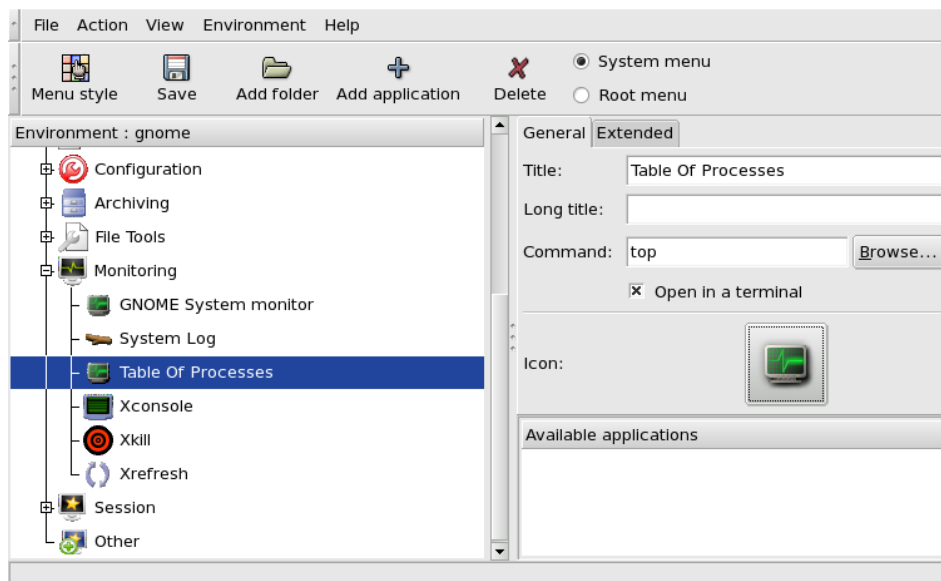
Figure 5-4. A New Menu Entry with MenuDrake

> While modifying your menus, you might make a big mess out of them... Remember that you can reload the menus as you last saved them by pressing the **Ctrl**-**R** keys (or accessing the File→Reload user config sub-menu). You can also revert to the default menus by accessing the File→Reload system menu sub-menu.

Finally to activate your modifications, click on the Save button and that's it. Congratulations! You can now test your new settings by accessing the main menu.

> Depending on the graphical interface you are using, the changes to your menu may not be shown immediately. In some cases, you may need to log out and back in again for the changes to take effect.

5.1.2. Advanced Features

5.1.2.1. Different Menu Styles

Depending on the experience the users working with your machine have, you may want to provide them with different menu styles. Mandriva Linux provides a few template menus which you can eventually customize. They are available through the main window's Menu Style button.

Figure 5-5. Choosing a Menu Style

Choose one of the available options:

- **Use system administrator settings.** If you started MenuDrake as a simple user, you can choose to set your personal menu style to use the menus prepared by the system's administrator.
- **All applications.** This is the traditional menu shipped with Mandriva Linux and it contains nearly all the available applications, sorted into functional categories.
- **What to do?** Specifically designed by our ergonomics team, this menu provides a fast access to most common applications sorted by usage, such as Play a game, Use the Internet, etc.
- **Original menu.** These are the plain menus as provided by the KDE or GNOME desktops. This menu probably lacks some applications.

When you have chosen a menu style, click on OK. You will then be able to see the corresponding menu structure in the main window, and you can then customize it.

5.1.2.2. About the Environment Menu

The entry we have just added to the menu is now available in the active graphical manager menu. It is also possible to make modifications to all graphical manager menus by choosing Environment→All environments.

All entries which only apply to the active graphical environment appear in blue in the tree structure on the left.

5.1.2.3. Moving and Removing Entries

MenuDrake entries support the drag-and-drop feature. Similarly, you may have noticed that whenever you remove an application from the menu, it appears in the "attic", that is the Available applications list on the bottom right corner. If you ever wish to add them again, you simply have to drag them to the desired place in the menu tree.

5.2. Configuring Start-Up Services

At boot time, the system starts a number of services (programs running in the background to perform a variety of tasks). This tool gives the administrator control over those services. See the *The Start-Up Files: init sysv* chapter of the *Reference Manual* for more information.
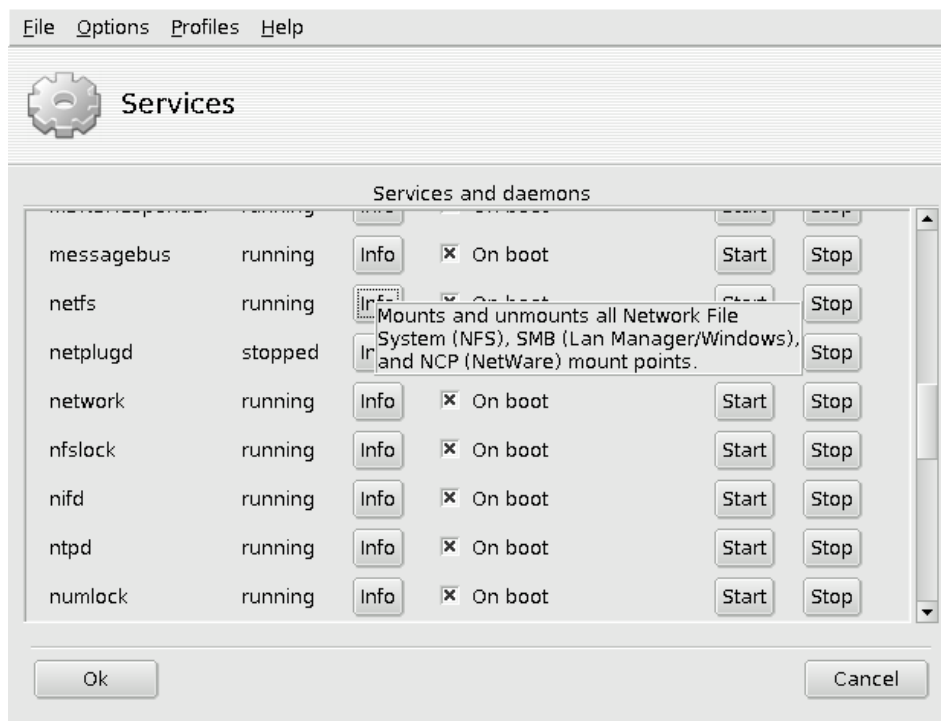
Figure 5-6. Choosing the Services Available at Boot Time

For each service, this is the list of items found in each column:

- Service name;
- Current Status: either `running` or `stopped`;
- Info: click on this button to get a little explanation about that service;
- On Boot: check this box if you wish this service to be automatically brought up at boot time[1]. Alternatively, if xinetd is installed and the service is a xinetd service, the label Start when requested will be displayed. Checking the box will then mean to activate that service in xinetd. You will also have to make sure that the xinetd service itself is activated.
- Start: immediately starts the service, or restarts it (stop+start) if it is already running;
- Stop: immediately stops the service.

For both the Start and Stop buttons, a tool tip will show you the status of the operation.

5.3. Managing Available Fonts on your System with DrakFont

This tool enables you to review the different font families, styles, and sizes available on your system. It also allows the system administrator to install new fonts.

The main window (see figure 5-7) shows a visual appearance of the currently selected font combination.

---

1. Generally in *runlevels* 3 and 5.
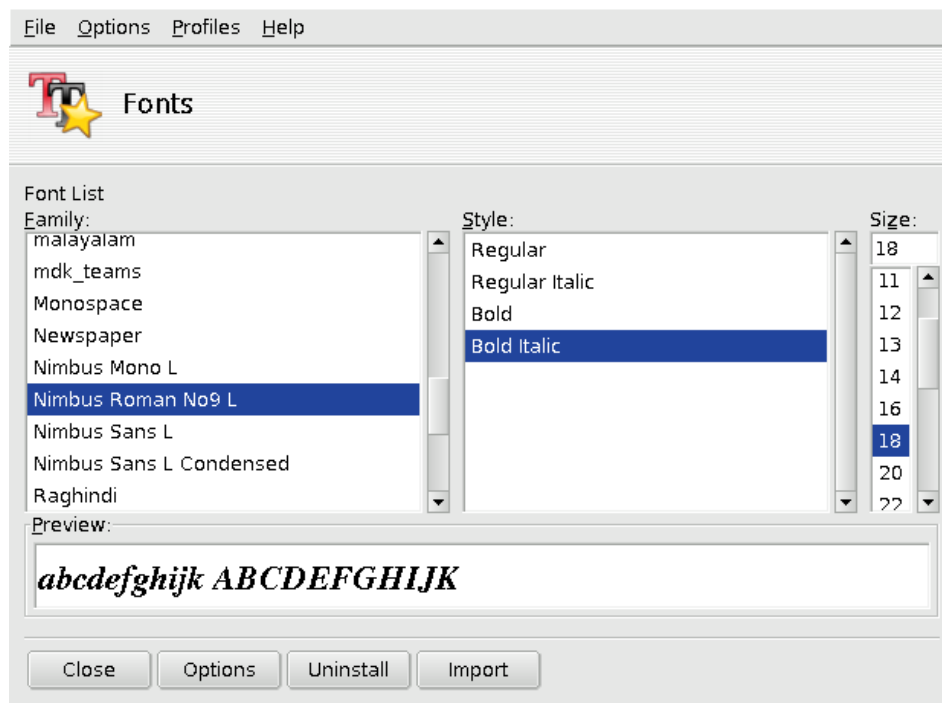
Figure 5-7. DrakFont's Main Window

drakfont is made up of a number of windows which are accessible through the buttons located at the bottom-left corner.

Options

Allows you to specify which applications and devices (such as printers) will support the fonts. Select the ones you want support for and click on the OK button.

Uninstall

Allows you to remove installed fonts, in order to save space for example. Use this with great care, it could have side effects on your applications. You should notably not remove fonts you did not install yourself.

Import

Allows you to manually add fonts found outside the Mandriva Linux distribution, on a local Windows® installation or from the Internet, for example. Supported font types are `ttf`, `pfa`, `pfb`, `pcf`, `pfm`, `gsf`. Clicking on the Add button will open a standard dialog allowing you to specify the font file to import. Once you've specified all the fonts you want to import, click on the Install fonts button.

 To select more than one font, double-click on the first font you wish to select and it will be added to the Import Fonts window. Then double-click the other fonts you wish to install and the same action will occur. When you are done click on the Close button and then on the Install fonts button. Once the installation operation is done, make sure the new fonts appear in the Family list.

5.4. Setting your Machine's Date and Time

 This little tool enables you to set your system's correct internal date and time.
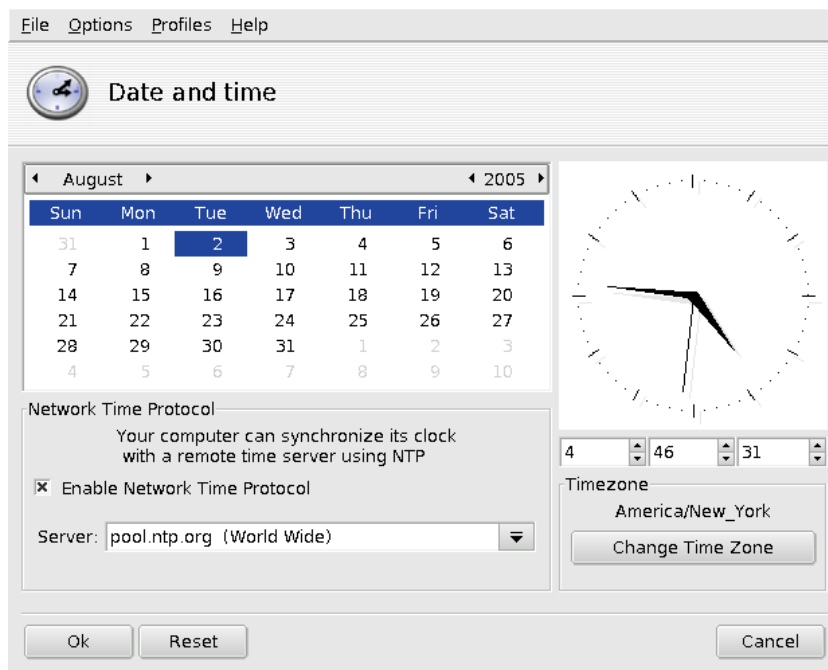
Figure 5-8. Changing Date and Time

You can set the date on the left and the time on the right:

- To change the year, click on the little arrows on each side of the year; same procedure to change the month. This updates the month view where you can click on the current day in order to highlight it.

- We recommended that you check the time-zone settings for your geographical location. Click on the Change Time Zone button and select the correct place in the tree view.

  Once you've chosen the time zone, a dialog will appear asking you whether your hardware clock is set to GMT. Answer Yes if only GNU/Linux is installed on your machine, No otherwise.

- To change the time, you can either move the hour, minute and second hands of the analog clock, or change the numbers below it.

- If you have a permanent Internet connection and want your system to synchronize its internal clock with time servers on the Internet, put a check mark in the Enable Network Time Protocol option and select a server in the Server pull-down list, preferably one near you. If you know the name or the IP address of a local server you can also enter it manually in that field.

> The NTP (Network Time Protocol) package needs to be installed. If it isn't, a dialog will pop up and ask you whether you wish to install it.

> If you select the `pool.ntp.org` server, NTP will automatically choose a server near to the time zone you selected.

When you're finished, click on OK to apply your settings or Cancel to close the tool, which will discard your changes. If you want to return to your previous settings, click on Reset.

5.5. Monitoring System Activity and Status

This tool allows you to look for specific entries in various log files, therefore making it easier to search for particular incidents or security threats.

Additionally a nifty wizard allows you to set up mail alerts to be warned whenever the load is too high on your machine, or when a service is shut down.

5.5.1. Browsing System Logs
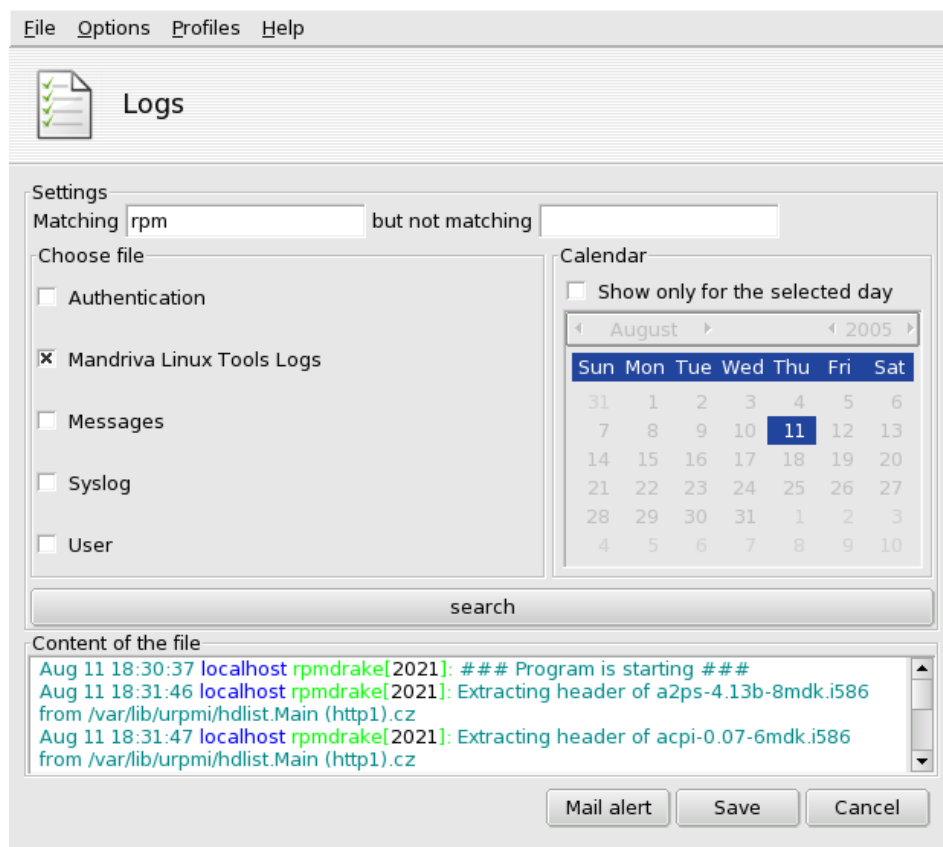
Figure 5-9. Browsing and Searching through System Logs

These are the steps to follow in order to browse or look for a specific event into the system logs:

1. You must choose which specific words to match by filling the Matching (log files contain the words) field and/or the but not matching (log files which don't contain the words) field. At least one of the two fields must be filled.

2. Then in the Choose file area select the file you want to perform the search on. Simply check the corresponding box.

> The Mandriva Linux Tools Log is filled by Mandriva Linux-specific configuration tools, like those you find in the Mandriva Linux Control Center. Each time these tools modify the system configuration they write a line in this log file.

3. Optionally, you can restrict the search to a specific day. In that case, check the Show only for the selected day box and choose the desired day from the calendar.

4. When all is set up, click on the Search button. The results will appear in the Content of the file area at the bottom.

Clicking on the Save button will open a standard dialog letting you save the search results into a plain text (`*.txt`) file.

5.5.2. Setting up Mail Alerts

In order to facilitate server monitoring, Mandriva Linux supplies a simple tool which sends automatic mail alerts whenever something goes wrong on your server.

Clicking on the Mail alert button of the LogDrake main interface (see figure 5-9) starts the wizard. First you're asked whether you wish to configure or stop the mail alert system. Choose Configure the mail alert system entry in the pull-down list, and click Next.
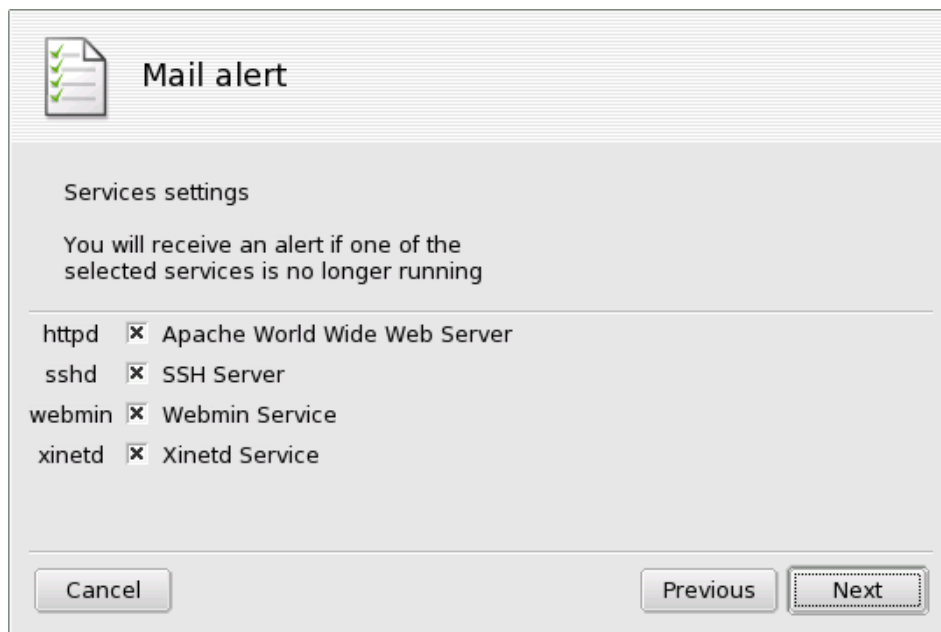
Figure 5-10. Setting up a Mail Alert: Services

The next step (see figure 5-10) allows you to select the services you wish to receive alerts from in case they stop working. Simply check the service boxes which interest you, and go on to the next step.

> The services listed are the ones present on your system. Here's a
> list of the currently tracked ones:
>
> - Postfix Mail Server;
> - Webmin Service;
> - FTP Server;
> - BIND Domain Name Resolver;
> - Apache World Wide Web Server;
> - SSH Server;
> - Samba Server;
> - Xinetd Service.

Figure 5-11. Setting up a Mail Alert: Load

Select the load you which you consider unacceptable by moving the Load slider (see figure 5-11). A high system load may indicate that a process has gone out of control, or simply that there's a very high demand on this machine. Therefore a service is suffering from it and is delayed. As a rule of thumb, the load on your computer should not exceed 3 times the number of processors you have on it.
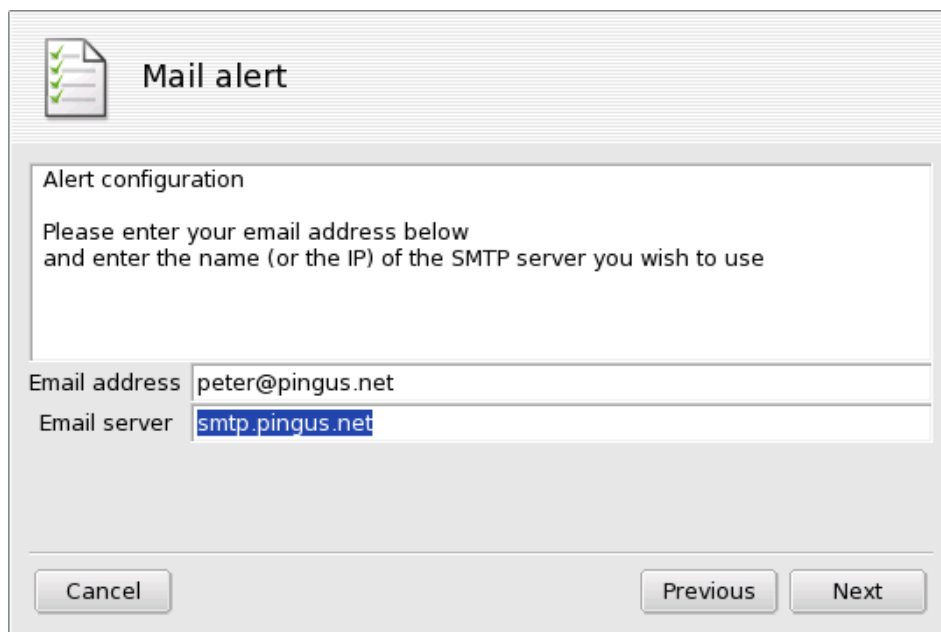
Figure 5-12. Setting up a Mail Alert: Recipient

Finally you need to tell the system to whom these alerts should be sent to (see figure 5-12). Provide an e-mail address and the mail server (local or on the Internet) to relay the alerts to.

When the wizard is finished, an hourly check is set up to check for unavailable services and the system's load. If needed a mail alert is sent to the alerts' recipient.

5.6. Access to the Console

This tool simply opens a virtual terminal console for the `root` user. You can use it to issue any command, but be careful! There are no restrictions on the actions you can take on your machine as `root`, and you could render your machine unusable.

To learn how to use the command line interface, you should read the Introduction to the Command Line chapter of the Mandriva Linux *Reference Manual* . To exit the console, type `exit` or press **Ctrl-D**.

5.7. Managing Users and Groups

UserDrake allows system administrators to easily add and remove users from the system, to assign users to a group, and to manage user groups in the same manner.

In this section we will only focus on user management. Group management being similar.

5.7.1. The Interface

Launching UserDrake will display the main window (figure 5-13) which lists the users currently defined on the system. You can switch from users to groups by clicking on the Groups tab next to the Users tab.
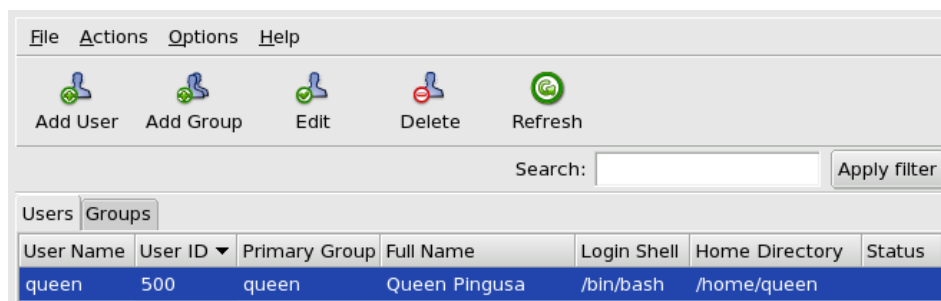
Figure 5-13. The User List in UserDrake

All changes have immediate effect on your local user database. If the user list is modified outside of UserDrake, you can refresh UserDrake's window by clicking on the Refresh button.

If you make changes to an already logged in user, those changes won't take effect until he or she logs out, and logs in again.

Available actions are:

Add User

Adds a new user to the system. We will detail this procedure in *Adding a New User*, page 68.

Add Group

Adds a new user group to the system.

Edit

Allows you to change the parameters of the selected user or group. We will detail editing user parameters in *Adding a New User*, page 68. In the case of a group you will be able to assign or remove users from that group.

Delete

> Removes the selected user or group from the system. A confirmation dialog will be shown, and in the case of a user you will also be able to remove the user's /home directory and `mailbox`.

5.7.2. Adding a New User

We created the non-privileged user Queen Pingusa at installation time, and now we want to create a new user called Peter Pingus. Then we want to make them both members of the `fileshare` group, so that they can share folders with other users on the network (see *Allowing Users to Share Folders*, page 83, custom option).

Click on the Add User button, the dialog box to add a new user will pop up (see figure 5-14). The only required field is Login although we strongly recommend that you set up a password for this new user: enter it in both the Password and Confirm Password fields. You can also choose to add a comment in Full Name. Generally, this is the full name of the user, but you can put whatever you want.

Figure 5-14. Adding a New User in the System

We now have two users in our list. Select one of them with your mouse, and click on the Edit button. The dialog box shown in figure 5-15 will pop up. It allows you to modify most available user parameters.

Figure 5-15. Adding Users to a Group

The dialog is made of the following tabs:

User Data

> Allows you to modify information provided when the user was created.

Account Info

> Enables you to provide an expiration date for that account, after which the user won't be able to connect to the system. This is useful for temporary accounts. It's also possible to temporary lock an account to prevent a user from logging in. Finally, this tab allows you to change the icon associated with the user.

Password Info

> Allows you to provide a password expiration date, after which the user will have to change his password.

Groups

> Shows the list of available groups where you can select the groups to which any user should belong.

For our users we just need to look for the `fileshare` entry and check the box associated to it. Then click on the OK button to make the changes effective.

5.8. Backing Up and Restoring your Files

This tool allows you to back up data present on your computer onto different media and also to a remote machine over a network. Once the parameters are set, you can run the backup periodically. Then, you can forget about it until you wish to restore some files.

5.8.1. A Practical Example Using the Wizard

You can access this tool by clicking on the Backups icon in Mandriva Linux Control Center's System section. Click on the Wizard Configuration button to start the wizard. After making your choices in each step click on Next.

5.8.1.1. First Step: What to Backup
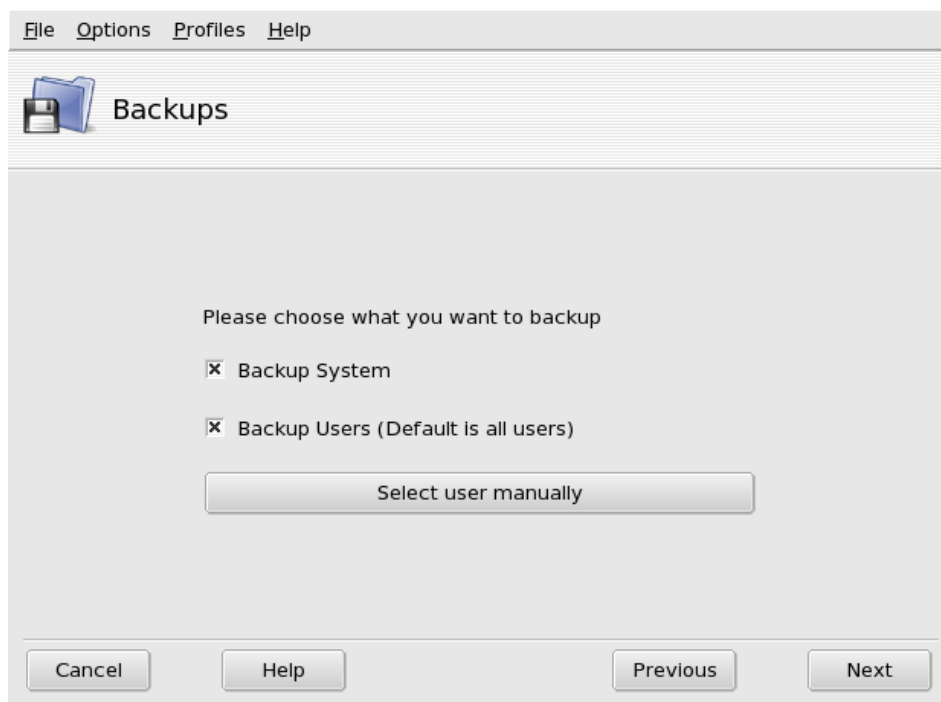
Figure 5-16. Selecting What to Backup

Select Backup System to include the /etc directory where all your current system configuration files lie. This allows you to "transport" your system to a different computer with little effort: only hardware-dependent configuration will have to be revised.

> The "system" backup does not include applications themselves (i.e. executable files, libraries). *A priori* this makes sense because it is likely that you will have access to the system's installation media from which applications can be easily installed again on the target computer.

Select Backup Users to include all the files included in all of your users' /home directories. Clicking on the Select user manually button lets you select individual users and give you the following options:

- Do not include the browser cache. Selecting this option is recommended due to the very nature of the ever-changing browser's cache.

- Use Incremental/Differential Backups. Selecting this will preserve old backups. Choosing Use Incremental Backups will only save files which have been changed or added since the **last** backup operation. Choosing Use Differential Backups will only save files which have been changed or added since the **first** backup operation (also known as the "base" backup). This last option takes more space than the first one, but allows you to restore the system "as it was" at any given point in time for which a differential backup was made.

5.8.1.2. Second Step: Where to Store the Backup
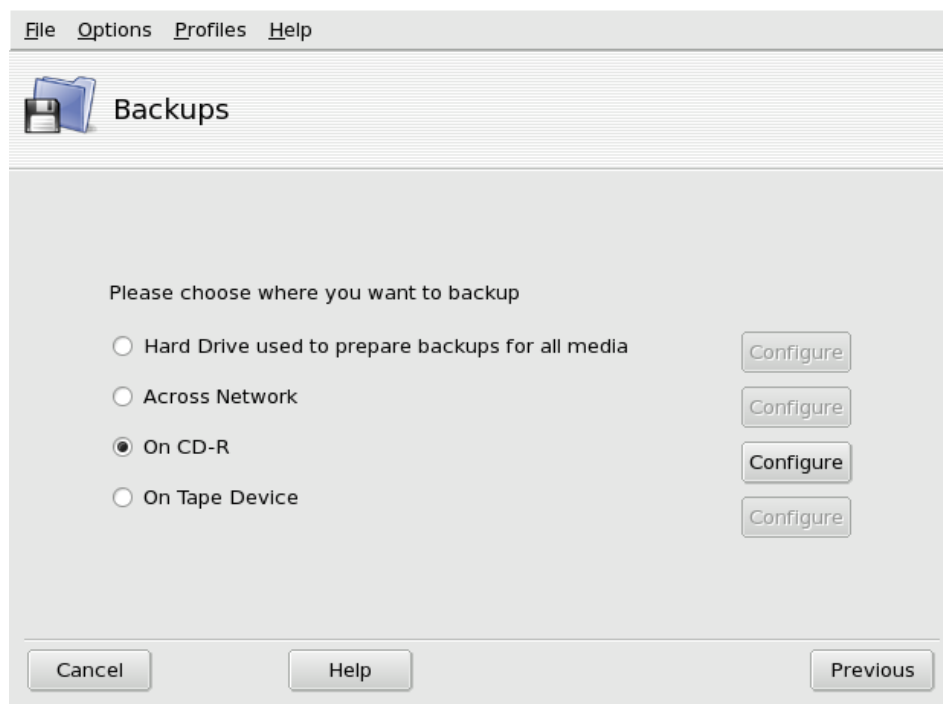
Figure 5-17. Selecting Where to Store the Backup

All possible backup media are listed, along with a Configure button to change media-dependent options:

Hard Disk Drive

> The local hard disk drive is used to prepare backups for all media except NFS and direct to tape. You should not perform backups on your local hard disk anyway, you should always backup on remote or removable media. You can set the directory for storage and the limit of storage space. You can also set how many days to keep incremental or differential backups in order to save disk space.

Across the Network

> To store the backup on a remote computer accessible using different methods. You can set the connection parameters as well as the access method and its options (if applicable). Please note that NFS backups are considered to be local disk backups, even if they are effectively stored on a remote system.

On Tape

> You can set the tape device if it's not detected automatically, and tape parameters such as writing directly on tape, whether or not to rewind, erase and eject the tape.

Optical Media (CD-R)

> This is our preferred media for the example, so click on its Configure button to set the required parameters (see figure 5-18).

Figure 5-18. Setting Optical Media Parameters

If it isn't done automatically, use the Choose your CD/DVD device combo box to set the CD/DVD device. Set the medium's type and size, multisession and erasing options.

For multisession recordings, please bear in mind that the option to erase the medium is only effective for the 1st session and also that session-related information recording takes some space out (20 to 30 MB) for each session, so the "real data" storage space will actually be less than the medium's size.

5.8.1.3. Third Step: Review and Store the Configuration

File   Options   Profiles   Help

Backups

Drakbackup Configuration

Backup Sources:

- System Files:
        /etc

- User Files:

- Save on Hard drive on path: /var/lib/drakbackup
      Limit disk usage to 1000 MB

- Burn to CDRW on device: ATAPI:/dev/hdd   Erase=Yes

- Options:
      Backups use tar and gzip

Cancel   Help   Previous   Save
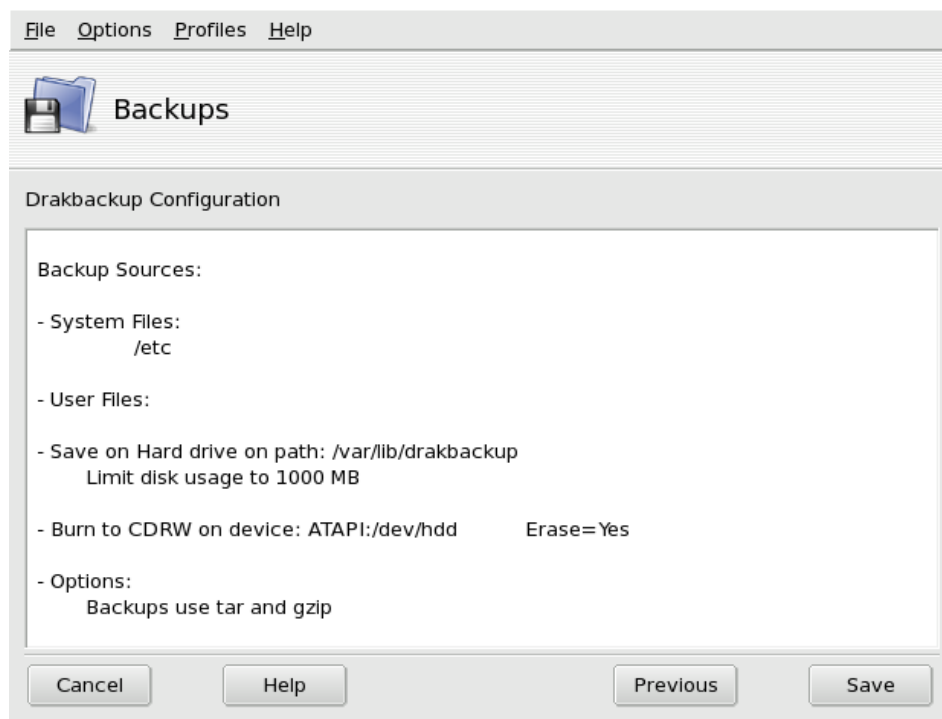
Figure 5-19. Review Configuration Parameters

The last wizard step shows a summary of the configuration parameters. Use the Previous button to change any parameter you are not satisfied with. Click on Save to store them. The backup set is now ready to be performed.

5.8.1.4. Performing the Backup

Click on Backup Now, make sure the corresponding media is ready (the recordable CDs in our example), and then on Backup Now from configuration file to perform the backup.

> ⚠️ If the backup set size exceeds the medium's available capacity, the backup operation might just fail. This is a known issue and it's being worked on. As a work-around, please try to remove files from the backup set so its size never exceeds the medium's available capacity.

A dialog will display the current progress of the operation. Please be patient: the time it takes to back up depends on many factors such as the size of the backup file set, the speed of the storage option selected, and so on. Once the operation is finished a report is shown: look for possible errors on it and take corrective measures if needed.

5.8.2. Restoring Backups
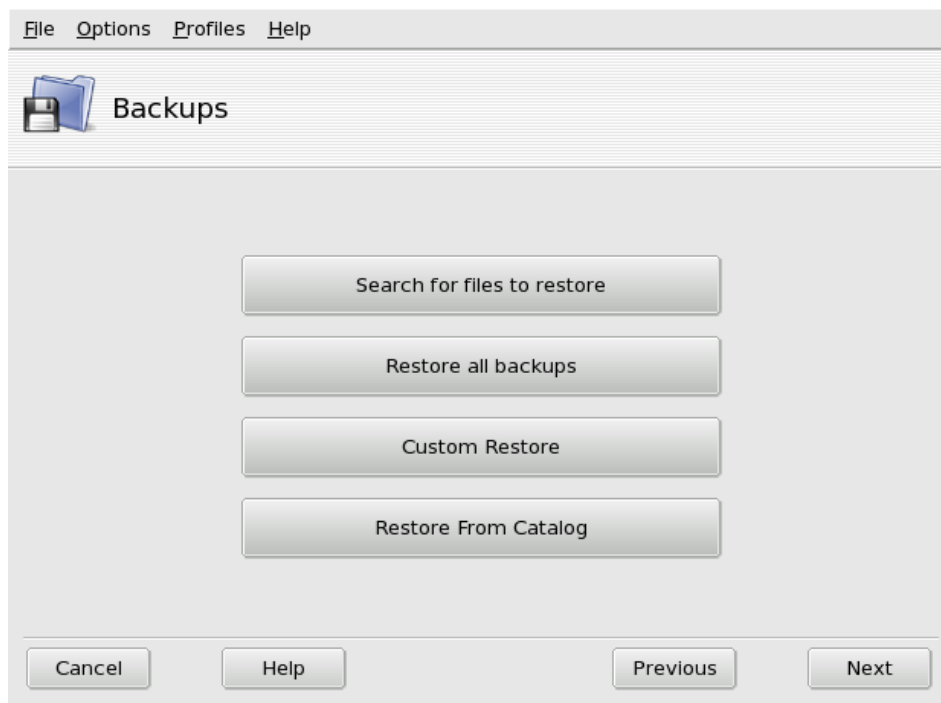
Figure 5-20. Choosing the Restore Type to Perform

Make sure the media you want to restore the backup from is accessible and ready and click on the Restore button. In our example we restore the whole backup so on the restore dialog (figure 5-20) click on Restore all backups and then on the Restore button to start the restoration process.
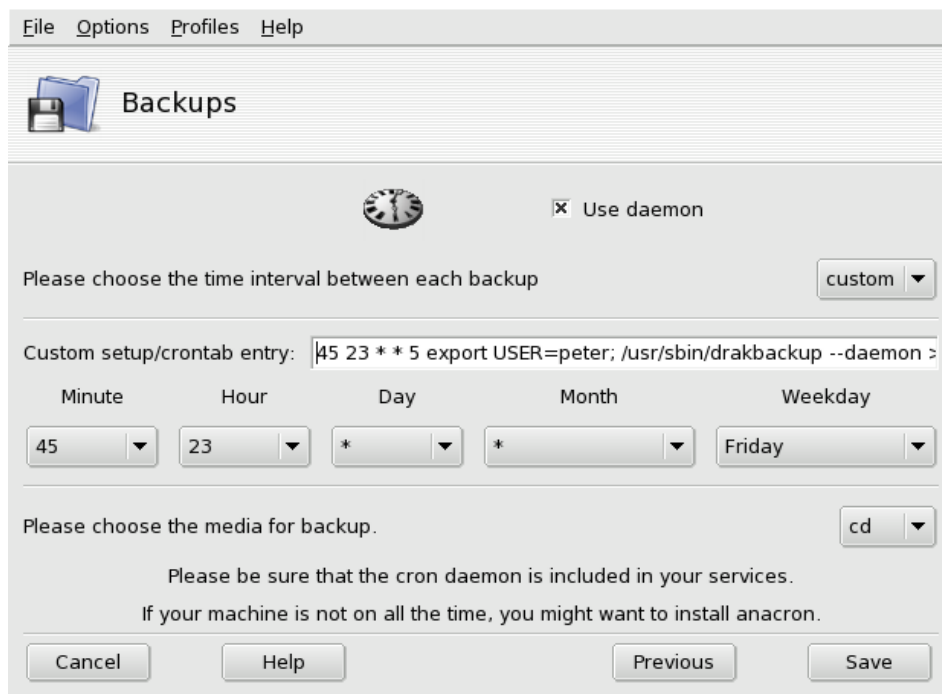
> Existing files in the target restoration directory (same location where the backup was made from, by default) will be overwritten.

Feel free to investigate the other restore options if you want to restore part of a backup instead of the full file set.

5.8.3. Automating Periodic Backups

In the tool's main window, click on Advanced Configuration and then on the When button. In the backup scheduling window (see figure 5-21) select Use daemon to define the schedule.

Figure 5-21. Daemon Options Window

You are then asked to specify the interval (or period) between each backup operation and the storage media. In our example we set up a customized calendar (custom period selected) to perform a backup every Friday at a quarter to midnight and store it on CD.

5.8.4. Advanced Backup Wizard Configuration

Click on Advanced Configuration and then on the More Options button to set more backup options (see figure 5-22).

Figure 5-22. Miscellaneous Options Window

Use the Please choose the compression type pull down list to select the compression used for your backups among `tar` (no compression), `tar.gz` (`gzip` compression) and `tar.bz2` (`bzip2` compression: better but slower).

Select the Use .backupignore files option to have certain files excluded from the backup. The `.backupignore` file should be present in every directory of the backup file set where files are to be excluded. Its syntax is very easy: a one-file-per-line list of the names of the files to exclude.

> You can use the star (`*` = "matches any string") and the question mark (`?` = "matches one and only one character, regardless of what that character is") in the `.backupignore` file to exclude sets of files. For example, `somename*` matches all files whose names start with `somename`, and `image00?.jpg` matches files named `image001.jpg`, `image009.jpg`, `image00a.jpg`, `image00h.jpg`, etc.

Select the Send mail report after each backup to option and fill the e-mail address so the tool knows to whom to mail the backup operation report. Please bear in mind that the system needs to have a working MTA (Mail Transport Agent) for this option to be effective.

Select the Delete Hard Drive tar files after backup to other media option to free that space after performing the backup.

Chapter 6. Mount Points and Remote Directories

## 6.1. Managing your Hard Drive Partitions with DiskDrake

Partitions are initially set up during the installation process. DiskDrake allows you, to some extent, to resize your partitions, move them, etc. DiskDrake can also deal with RAID devices and supports LVM but we will not discuss these advanced uses here. Please refer to the *Reference Manual* to learn more about what partitions are used for.

DiskDrake is very powerful and can therefore be a dangerous tool. Misuse of it can very easily lead to data loss on your hard drive. Because of this potential loss of data, you are strongly advised to take some protective measures before using DiskDrake:

1. Back up your data. Transfer it to another computer, ZIP disks, etc.

2. Save your current partition table (the table describing the partitions held on your hard drive(s)) to a floppy disk (see *DiskDrake's action buttons*, page 78).

6.1.1. The Interface
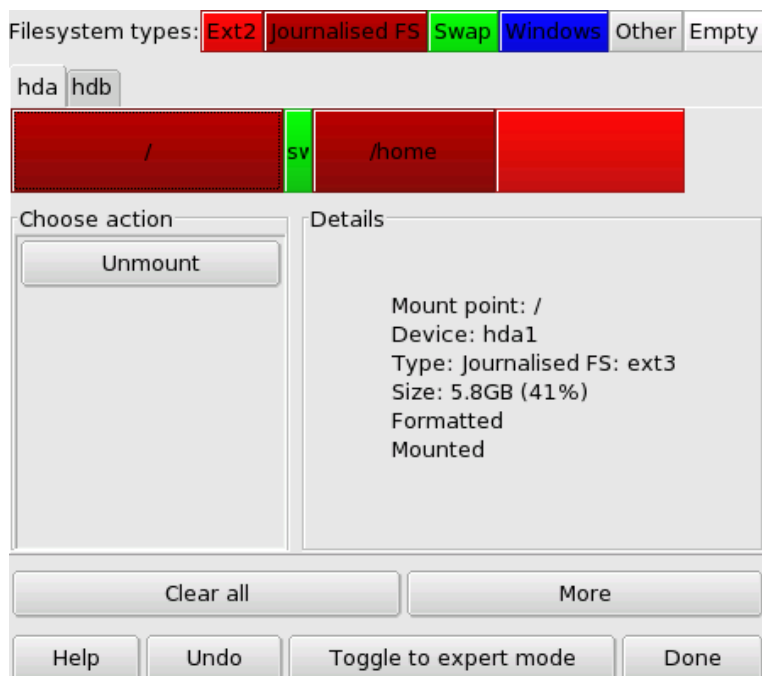
Figure 6-1. DiskDrake's Main Window

DiskDrake enables you to configure each physical hard drive on your machine. If you only have one IDE disk, you will see a single tab called hda below the file-system types. If there is more than one drive, then each drive will have its own tab and will be named according to the Linux name for that drive. DiskDrake will allow you to manage the partitioning of each drive.

The window (see figure 6-1) is divided into four zones:

- Top. The structure of your hard drive. When you launch DiskDrake it will display the current structure of the drive. DiskDrake will update the display as you make changes.

- Left. A menu relevant to the partition currently selected in the above diagram.

- Right. A description of the selected partition.

- Bottom. Buttons for making general actions. See next section.

We will now review the actions available through the buttons at the bottom of the window, and then describe a practical use case.

6.1.2. DiskDrake's action buttons

Clear all

> Clicking on this button will clear all partitions on the current hard drive.

More

> Displays a three button dialog allowing you to:

> **Save partition table.** Allows you to save the current partition table to a file on a disk (a floppy, for example). This may prove useful if a problem arises (such as an error made during drive repartitioning).

> **Restore partition table.** Allows you to restore the partition table as previously saved with Save partition table. Restoring a partition table may recover your data as long as you do not reformat partitions, because the formatting process will overwrite all your data.

> **Rescue partition table.** If you lose your partition table and have no backup, this function scans your hard drive to try and reconstruct the partition table.

Help

> Display this documentation in a browser window.

Undo

> Cancels last action. Most modifications done on your partitions are not made permanent until DiskDrake warns you it will write the partition table. This button therefore allows you to undo all of your modifications on partitions up to last write.

Toggle to expert mode

> This button allows you to access the expert mode functions (which are even **more** dangerous if you are not sure what you are doing). Reserved for experts.

Done

> Saves your changes and exits DiskDrake.

## 6.1.3. Resizing an Old Partition and Creating a New One

In this section, we are going to do a little exercise to demonstrate one of the more useful features of DiskDrake. Let us imagine that you decide to use your machine as an FTP server and you want to create a separate `/var/ftp` partition in order to host the FTP files. **Note that doing this step-by-step tutorial will actually modify the structure of your hard drive.**

This is what the current `/home` partition looks like (see figure 6-2), before any modification. We are going to shrink this partition in order to create free space for the new file system.

> In order to perform the steps in this example, all users of your system must be logged out, except `root`.

First of all, you need to unmount the /home partition by clicking on it and then pressing the Unmount button.
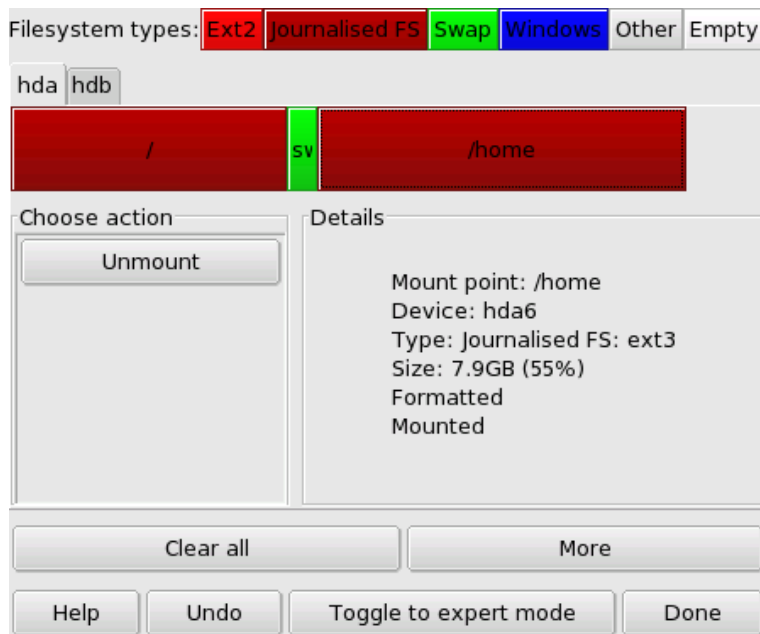
Figure 6-2. The /home Partition Before Resizing

The next step, as you may have guessed, is to click on the Resize button. A dialog will appear (see figure 6-3) which will allow you to choose the new size for the /home partition. Move the slider to reflect the new size, then click on OK.
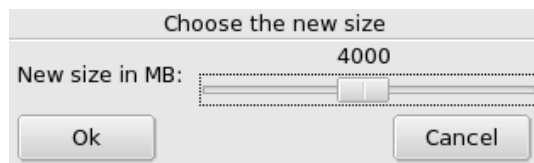
Figure 6-3. Choosing a New Size

When this is done, you will notice that the graphic representation of your hard drive has changed. The /home partition is smaller, and an empty space appears on the right. Click on the empty space and then on the Create button which appears. A dialog (see figure 6-4) will let you choose the parameters for the new partition. Set the size, choose the file system you want to use (usually `Journalized FS: ext3`) and then enter the mount point for the partition, which in our example will be /var/ftp.

Figure 6-4. Defining the New Partition

figure 6-5 shows what our projected partition table now looks like.
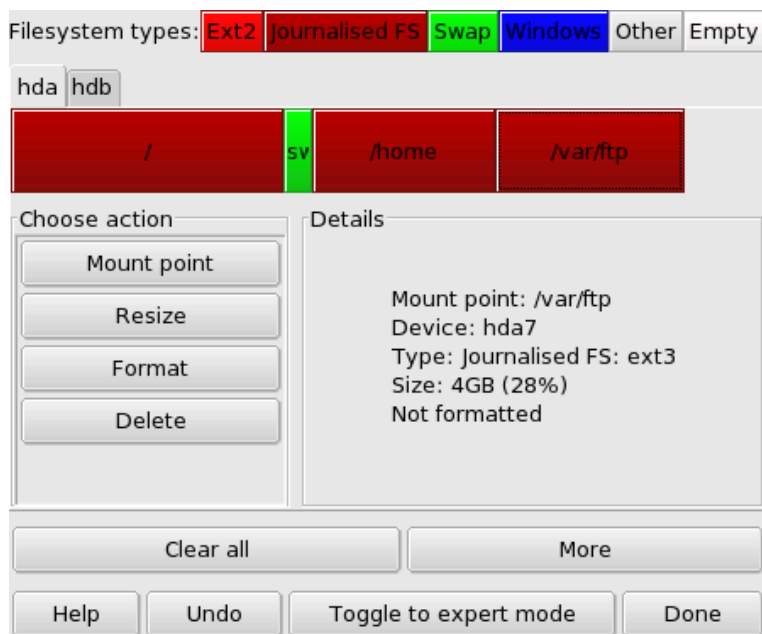
Figure 6-5. The New Partition Table

The last step is to format (prepare to host files) the newly created partition. To format the partition, click on its representation in the partitions picture, then on the Format button. Confirm the writing of the partition table to disk, the formatting of the partition and the update to the `/etc/fstab` file. You may be asked to reboot the computer to make changes effective.
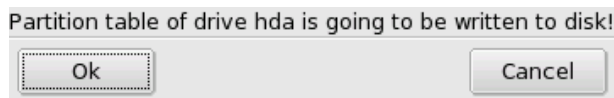

Figure 6-6. Confirming the Writing of the Partition Table

6.2. Managing Removable Devices

 These tools enables system administrators to easily control most options which affect the behavior of removable devices such as floppy, CD and DVD disks. Note that, by default, all removable devices are automatically made available so users shouldn't have to manually mount media.
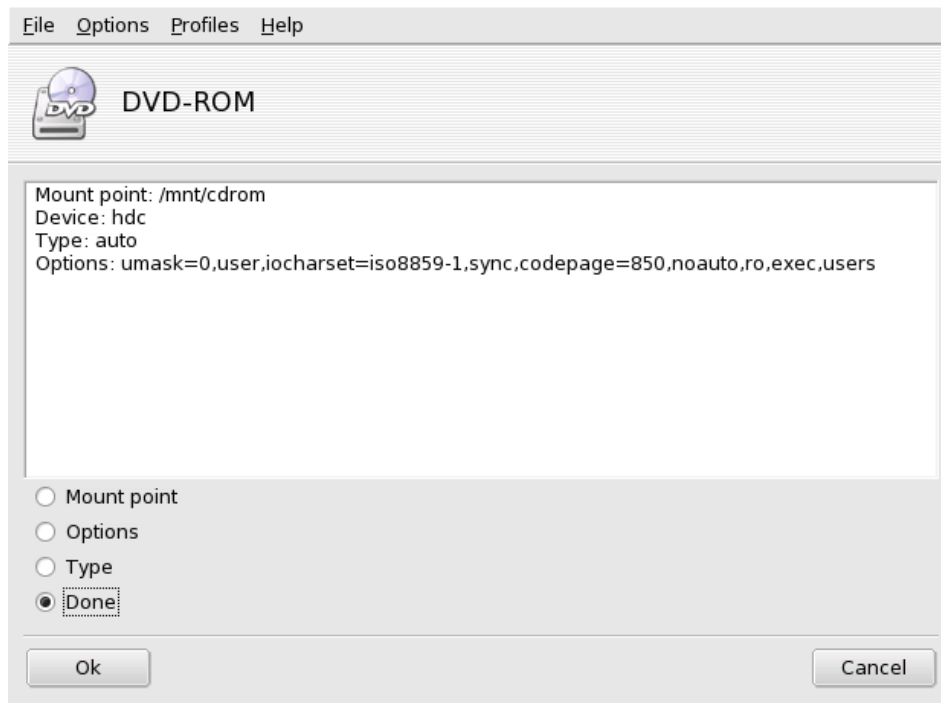
Figure 6-7. Changing a Parameter

For each device the following properties may be changed:

- **Mount point.** The directory where the device's files will be accessible from. You can either choose an entry in the list or type in your own path. If the directory does not exist, it will be automatically created.

- **Options.** Controls various device options, notably whether it is mounted automatically (supermount) or not. Note that if the supermount option is selected, the two others (user and `noauto`) must not be selected.

- **Type.** Displays a list of file-system types. If you have a specific medium with an uncommon file system on it, this is where you can tell Linux how to access it.

Select the property you wish to change and click on OK. The corresponding dialog will pop up in which you can change your settings. Then click on OK again. The system will then ask you if you want to save the modifications in the `/etc/fstab` file. By saying yes, you will not have to unmount and re-mount that device: it will be done automatically

6.3. Importing Remote SMB Directories

This tool allows the system administrator to import remote shared directories based on the SMB protocol (used mainly by Windows®) on the local machine.

While users can individually access remote shares through their file managers, it may be required in some cases to import a specific share for it to become immediately available for all users. We'll go through an example showing you how to import a template directory from a Windows® machine.
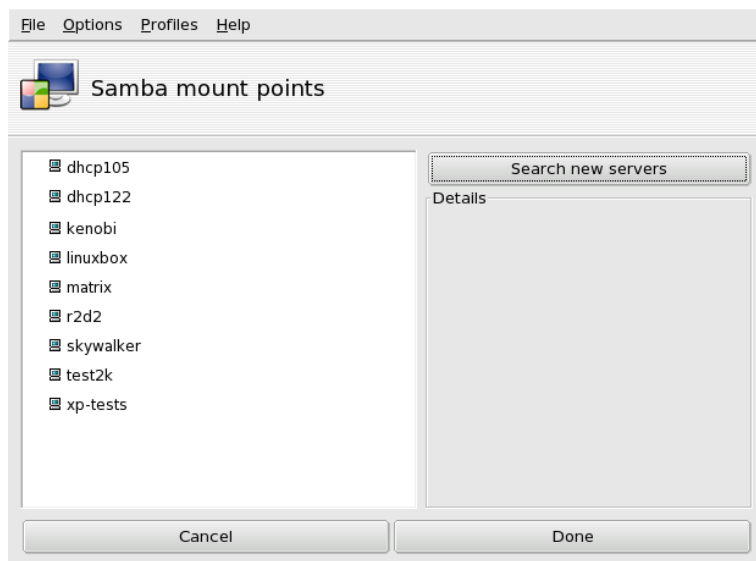
Figure 6-8. Scanning the Whole Network

Clicking on the Search servers button scans the local network for machines which currently share directories (including the local one). In our example, many servers are available. We'll choose `skywalker` and we'll make it available locally for all users.

Clicking on a machine's name will try to connect to it and browse for available shares. If that machine has password-protected shares, a dialog will pop up asking you to identify yourself.

Figure 6-9. Authenticating on a Remote Samba Server

Enter the correct Username, Password and Domain. The available shares on that machine will then appear. Click on the little arrow on the left of the server icon to show available shares.

> If the machine you're connecting to has both public and password-protected shares, then canceling the password entry dialog will connect you to that machine, but only to its public shares.

Figure 6-10. Choosing the Remote Directory to Import

Once a share is selected, a Mount point button appears. Clicking on it displays a dialog where you can type the local directory name where remote files will be accessible.

Once this is done, two more buttons appear:

- **Mount.** Makes the resource available locally. When this is done, users simply have to point their file manager to the directory selected as the mount point to get the files hosted by the server.

- **Options.** Allows you to set a user name and password to access that SMB mount point. Other permissions and advanced settings can also be set through this button.

Also, the little icon in front of the shared directory becomes

When you're finished configuring the access points for remote directories, click on Done. A dialog box will appear asking you whether you wish to save your modifications to the `/etc/fstab` file (where mount point information is usually stored), or not. Click on Yes to make the shares configuration persistent between sessions. Click on No to exit without saving your changes.

6.4. Importing Remote NFS Directories

This tool is exactly the same as the one mentioned in *Importing Remote SMB Directories*, page 81, except that it controls file sharing through the NFS protocol rather than SMB. Therefore it allows you to locally import shared files from NFS-friendly machines. The interface is the same as the one described in *Importing Remote SMB Directories*, and the effects are similar. Only the corresponding machines are different: UNIX® for NFS and Windows® for SMB.

Another difference is that there is no need to provide a password to access NFS shares. The authentication mechanism is host-based.

6.5. Allowing Users to Share Folders
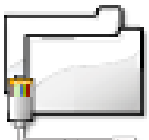
This tool enables you to share files with other users of your computer network. File sharing can be done on heterogeneous systems such as GNU/Linux and Windows®.

The file-sharing configuration is done in two simple steps: determining who can export folders, and then which protocol to use. A 3rd step is necessary if you select the Custom export option.
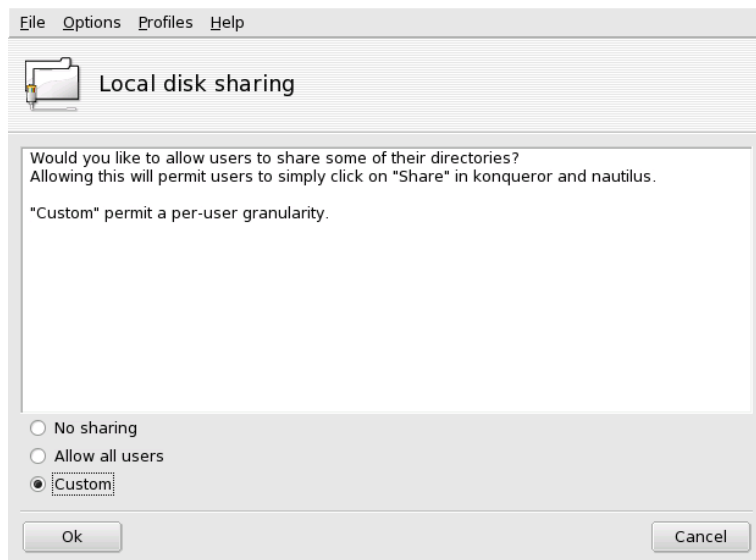
Figure 6-11. Controlling Exports

First of all, you must determine who will be able to share folders. Here are the different available options:

- **No sharing.** Prevents users from sharing data with others.
- **Allow all users.** All users are allowed to share data with others.

- **Custom.** By choosing this option, only users within the same `fileshare` group will be allowed to share data. If you choose this option, the `fileshare` group will be created and, as a 3rd step, you will be prompted to run UserDrake in order to add the allowed users to this group (see *Managing Users and Groups*, page 67).

Figure 6-12. Choosing the Export Protocol

Then you must choose which protocol to use for file sharing. Check one or both of the following:

- **SMB.** If you want your users to share files using Windows® systems.
- **NFS.** If you want your users to share files using UNIX® systems (such as GNU/Linux).

Once you have checked the appropriate boxes, click on OK. The required packages will be installed, if needed. If you uncheck a previously checked box, the corresponding service will be stopped.

Once users are allowed to share data, they can select the folders to be shared through their preferred file manager.

6.6. Setting up WebDAV Mount Points

WebDAV (*Web-based Distributed Authoring and Versioning*) is an extension to the HTTP protocol which allows you to create, move, copy, and delete resources on a remote web server. In practice, mounting a remote WebDAV repository on your local machine will allow users to modify a remote web server's files as if those files were local to the system.

Browse the WebDAV Resources (`http://www.webdav.org/`) pages to learn more about this protocol.
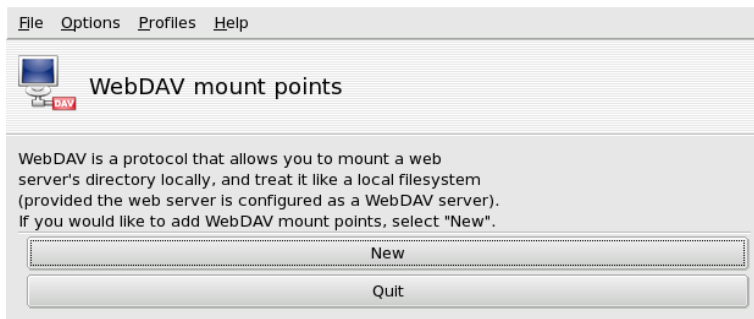
Figure 6-13. Managing WebDAV Mounts Points

The first time you launch this tool the required packages will be installed if needed, and only two buttons will be available. New, which allows you to define a new mount point, the other one just Quits the application. After you have defined mount points, they will appear as new buttons at the top of the buttons list. Clicking on a mount point button will take you to the mount point menu (see figure 6-14).

When you click on the New button you are asked for the URL of the web server. Enter the complete URL of the web server, beginning with `http://` or `https://`, then click OK.
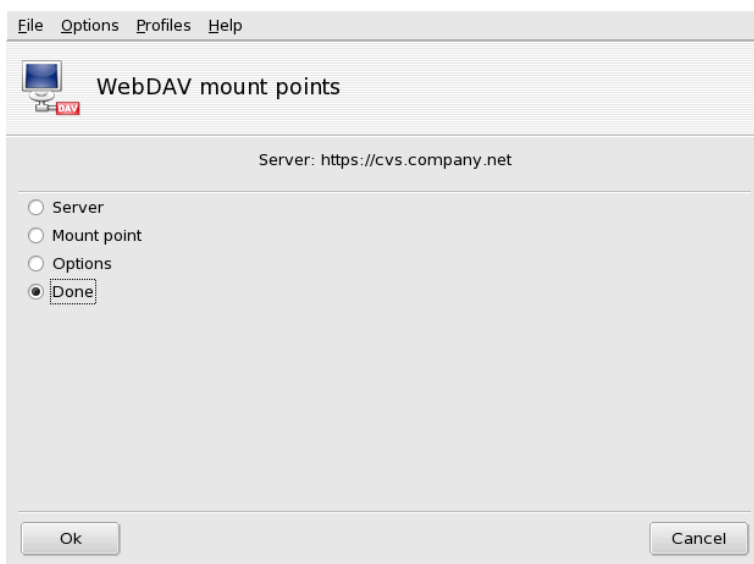
Figure 6-14. WebDAV Menu

You must now decide where the web server files will be accessible from. Select the Mount point option and click OK. There you will be able to choose a local directory or type in your own. If the selected mount point does not exist, it will be created.

If the server requires authentication, do not forget to fill the username and password fields in the Options dialog. Then all you need to do is to actually mount the remote repository by selecting Mount and clicking OK.

You will now be able to browse and modify files on the local mount point you have defined and the changes will be immediately available on the web server.

To make your settings are persistent between sessions, remember to save modifications to the `/etc/fstab` file, as suggested when you quit the wizard.

Chapter 7. "Security" Section

7.1. Securing your Machine through DrakSec

draksec is a graphical interface to msec (which stands for Mandriva Linux Security Tool). It allows you to change your system's security level and to configure every option of msec's security features.

msec has two aspects: system behavior configuration and periodic checks of system state. Each security level modifies the system configuration, making it more and more secure, and verifying more and more security related aspects.

7.1.1. Setting your Security Level

This tool is only displayed in expert mode. Choose Options→Expert mode from the menu and then access the Security section of Mandriva Linux Control Center.

File Options Profiles Help

Level and checks

| Basic options | Network Options | System Options | Periodic Checks |

Poor: This is a totally unsafe but very easy to use security level. It should only be used for machines not connected to any network and that are not accessible to everybody.

Standard: This is the standard security recommended for a computer that will be used to connect to the Internet as a client.

High: There are already some restrictions, and more automatic checks are run every night.

Security Level: High

Security Alerts: ☒

Security Administrator: peter

Ok   Help   Cancel

Figure 7-1. Choosing the Security Level of your System

Simply choose the security level you want from the Security Level pull-down list: it will be effective as soon as you click on OK. Please read the help text regarding security levels very carefully so that you know what setting a specific security level implies.

If you wish to check which options are activated for each security level, review the other tabs: Network Options, System Options and Periodic Checks. Click on the Help button to display information about the options and their default values. If some of the default options don't suit your needs, simply redefine them. See *Customizing a Security Level*, page 88, for details.

Put a check mark on the Security Alerts box to send by mail possible security issues found by msec to the local user name or to the e-mail address defined in the Security Administrator field.

> We highly recommend you activate the security alerts option so that the administrator is immediately informed of possible security issues. Otherwise the administrator will have to regularly check the relevant system log files.

7.1.2. Customizing a Security Level

Clicking on each of the Options tabs (and the Periodic Checks one) lead you to msec's list of security options. This allows you to define your own security level based on the security level previously chosen.
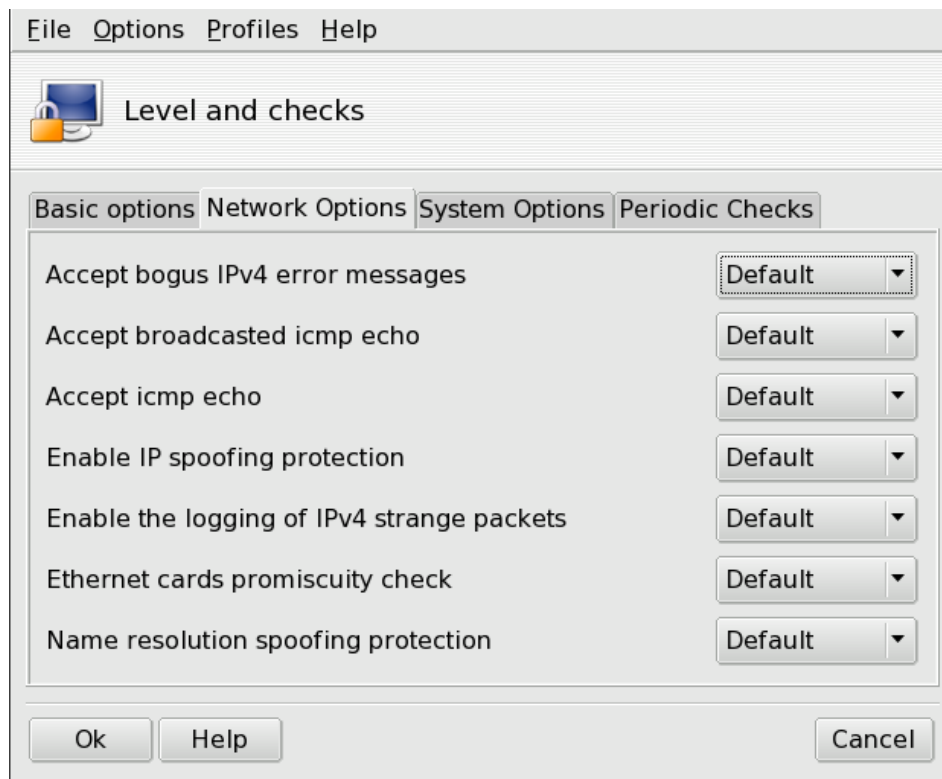
Figure 7-2. Modifying Standard Options

For each tab, there are two columns:

1. **Options List.** All available options are listed.
2. **Value.** For each option[1] you can choose from the corresponding pull-down menu:
   - **Yes.** Activate this option no matter what the default value is.
   - **No.** Deactivate this option no matter what the default value is.
   - **Default.** Keep the default security level behavior.
   - **Ignore.** Use this option if you don't wish this test to be performed.
   - **ALL, LOCAL, NONE.** The meaning of these are option-dependent. Please see the Help text available through the Help button for more information.

Clicking on OK accepts the current security level with custom options, applies it to the system and exits the application.

---

1. The default security level setting is shown in the Help window.

7.2. Controlling File Permissions with DrakPerm

In *Securing your Machine through DrakSec*, page 87, you saw how to change your system's security level and customize the security checks associated to those levels.

drakperm allows you to customize the permissions which should be associated with each file and directory in your system: configuration files, personal files, applications, etc. If the owners and permissions listed here don't match the actual permissions of the system's files, then msec (which stands for *Mandriva Linux Security Tool*) will change them during its hourly checks. These modifications can help prevent possible security holes or intrusions.

This tool is accessible only in expert mode. Choose Options→ Expert mode from the menu and then access the Security section of Mandriva Linux Control Center.
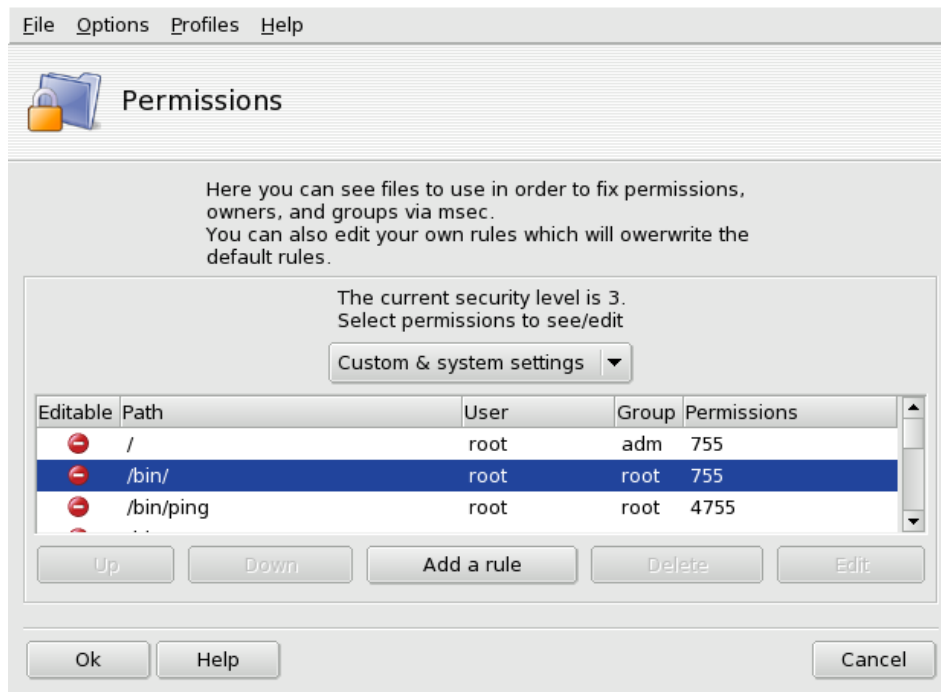
Figure 7-3. Configuring File-Permission Checks

The list of files and directories which appears depends on the current system's security level as set by msec, along with their expected permissions for that security level. For each entry (Path) exists a corresponding owner (User), owner group (Group) and Permissions. In the drop-down menu, you can choose to display only msec rules (System settings), your own user-defined rules (Custom settings) or both as in the example shown in figure 7-3.

You cannot edit system rules, as stated by the "Do not enter" sign on the left. However you can override them by adding custom rules.

If you wish to add your own rules for specific files or modify the default behavior, display the Custom settings list and click on the Add a rule button.
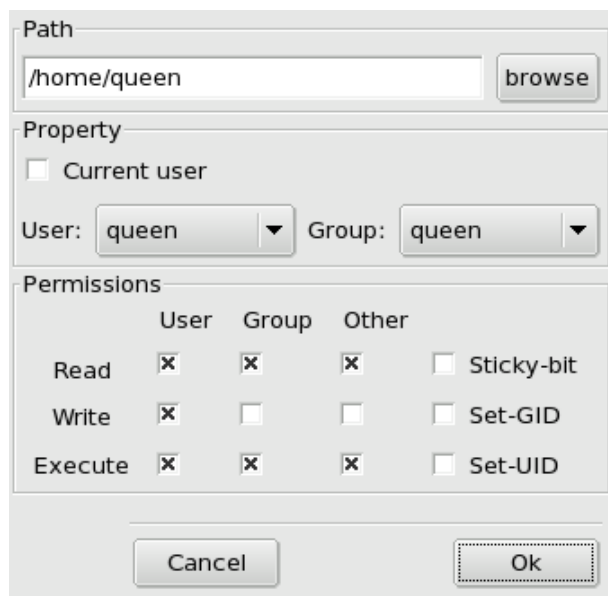
Figure 7-4. Adding a File-Permissions Rule

Let's imagine your current security level is set to 3 (high). This means that only the owners of the home directories can browse them. If you wish to share the content of Queen's home directory with other users, you need to modify the permissions of the `/home/queen/` directory.

> ⚠️ msec only changes file permissions that are more permissive than the one required by a certain security level. That means that for the change above, the permissions must be changed by hand.
>
> You can do this in Konqueror by modifying the permission properties of your home directory, and checking the Apply changes to all sub-folders and their contents option.

If you create more rules, you can change their priorities by moving them up and down the rules list: use the Up and Down buttons on your custom rules to have more control over your system's permissions.

7.3. Securing your Internet Access via DrakFirewall

This little tool allows you to set up a basic firewall on your machine. It filters connection attempts made from the outside, and blocks unauthorized ones. It's a good idea to run it just after installing your machine and before connecting to the Internet, therefore minimizing the risks of your machine being cracked.
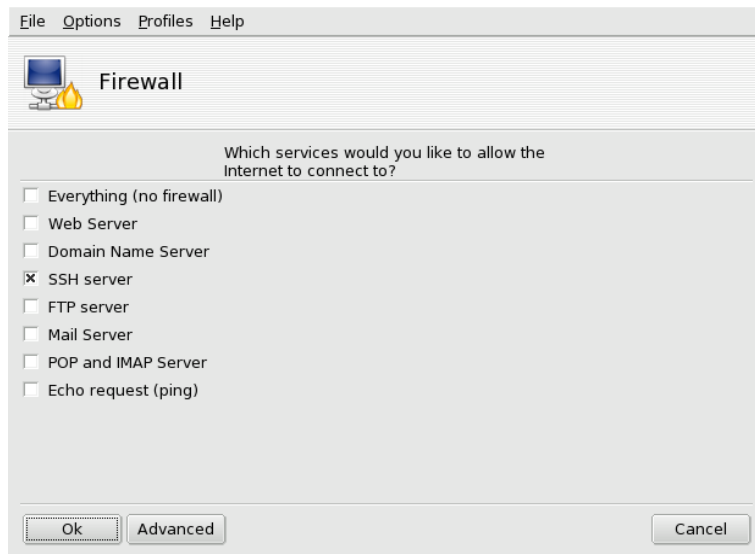
Figure 7-5. The DrakFirewall Window

If checked, uncheck the Everything (no firewall) box, and then check the boxes corresponding to the services you wish to make available to the outside world. If you wish to authorize a service which isn't listed here, click on Advanced to manually enter the port numbers to open.

> The Advanced button opens an Other ports field where you can enter any port to be opened to the outside world. Examples of port specifications are presented just above the input field: use them as a guide. It's possible to specify port ranges by using the `:` syntax such as `24300:24350/udp`.

Not checking a service in this list won't disallow you from connecting **to** it. It will only prevent people **from** the Internet to connect to that service on your machine. If you don't plan on hosting any service on your machine (common case for a desktop machine) just leave all boxes unchecked.

On the other hand if you wish to disable the firewall and leave all services accessible from the outside, check Everything (no firewall), but please bear in mind that this is **very insecure**, and therefore not recommended.

Then clicking on OK will bring you to the next step, which consists of selecting the network interface connected to the Internet.
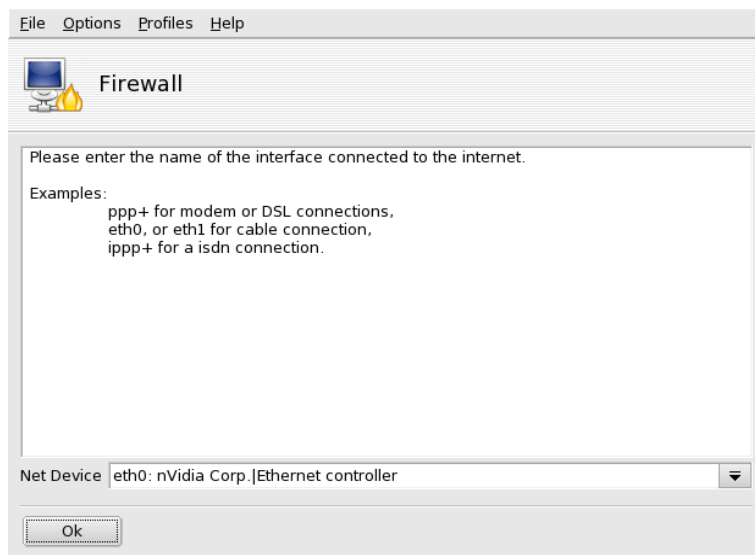
Figure 7-6. The Internet Interface

Refer to the examples to determine the name of your interface to the Internet. If you're unsure, you can check the system network configuration (see *Reconfigure Interfaces*, page 52). You can finally click OK to install the required packages, activate the firewall and enjoy your secure Internet connection.

Chapter 8. "Boot" Section

8.1. Configuring the Login Mode

This tool allows a user to be automatically logged into the system at boot time, without a password being required.
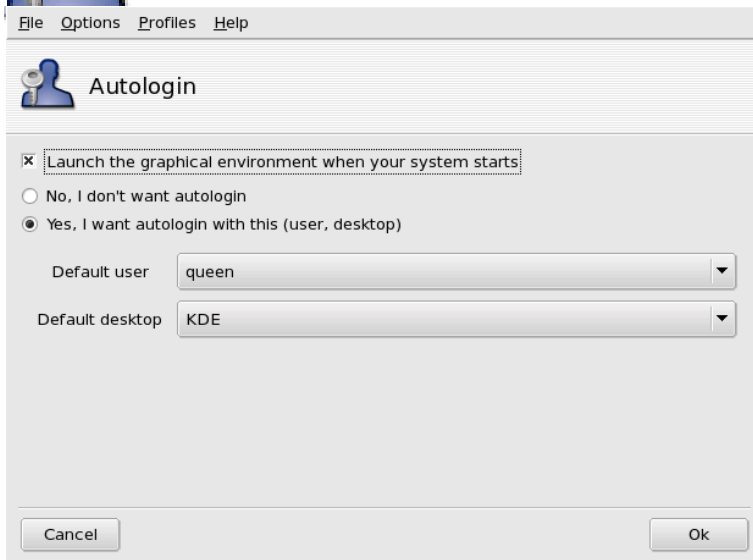
Figure 8-1. Choosing the Login Mode

There are a few parameters:

1. Graphical interface: if you wish to have the X Window System (graphical display) started at boot time, check the Launch the graphical environment when your system starts box. If you leave it unchecked, the text login will be displayed and you will need to start the graphical environment manually.

2. Autologin: if you're the only person using your machine and nobody else has access to it, you may choose to be automatically logged in at boot time. To do so, select the Yes, I want to autologin with this (user, desktop) option. Then choose the user you want to be logged on automatically in the Default user, as well as the preferred Default desktop in the pull-down menus.

8.2. Changing your Boot-up Configuration

This tool allows you to configure the bootloader and the boot menu entries.

Unless you're an expert, it's not recommended that you change these settings as this may prevent you from booting your machine the next time you try to power it on.
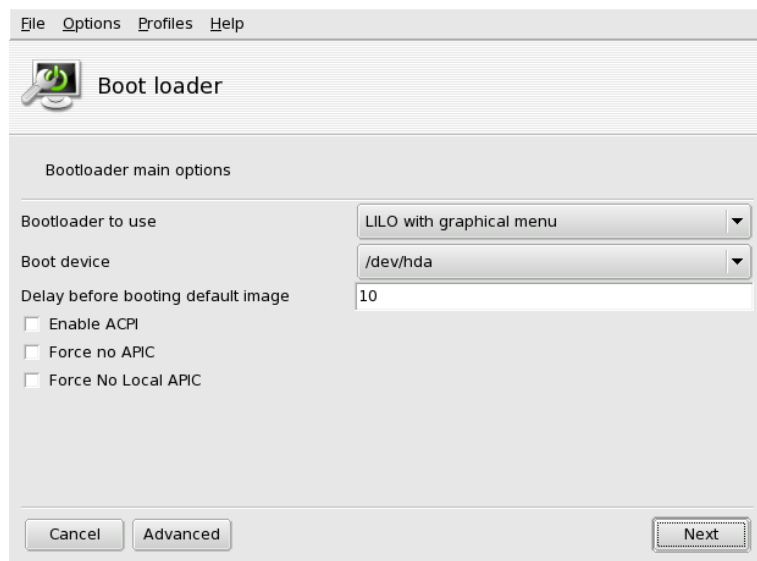
Figure 8-2. Choosing the Boot Mode

8.2.1. Configuring the Bootloader

You can choose between the GRUB and the LILO bootloader. Either one will allow you to boot Mandriva Linux, it's just a question of taste.

Unless you know what you're doing, you shouldn't change the default Boot device shown, since that's where the bootloader installs itself. If more than one OS is installed on your machine, it's a good idea to leave at least 5 seconds so that you can easily select a different menu item than the default image.

The dialog finally shows a few options which can be useful depending on your specific hardware.

Enable ACPI

Enable this option to allow better power management support if your hardware is ACPI compatible. ACPI is often needed for new laptops which no longer support APM.

Force No APIC

The IO-APIC (`http://www.wlug.org.nz/APIC`) is only really useful for multi-processor systems. It may cause problems on single processor systems and should be deactivated in that case by checking this box.

Force No Local APIC

The Local APIC can be used by Linux to program interruptions to wake up threads. On multi-processor machines it can be used to send interrupts to another processor.

These relatively new APIC features are known to cause problems on some computers because of badly designed chip sets or poor support in Linux kernel drivers. These problems can cause system freezes or incorrect device detection. So you may need to deactivate them by checking the corresponding box.

Click on Advanced to be able wipe the contents of the `/tmp` directory (which might hold some files you download from the Internet, for instance) and to tell Linux how much RAM your machine uses should this prove to be an issue at boot time.

8.2.2. Managing Boot Entries

After clicking Next, the list of available entries at boot time is displayed; the default one is marked by a star (⋆).

It's also possible to make an entry the default one by checking the Default check-box in the Modify dialog.

8.3. Customizing your Boot Theme

The Boot Theme utility enables you to change the default theme displayed at boot time, as well as a few other options.

- Choose one of the available boot modes in the pull-down menu (figure 8-3).
- Uncheck the Display theme under console option if you want a clean, "traditional" console. This relates to those accessible through the **Ctrl-Alt-Fn** keys.
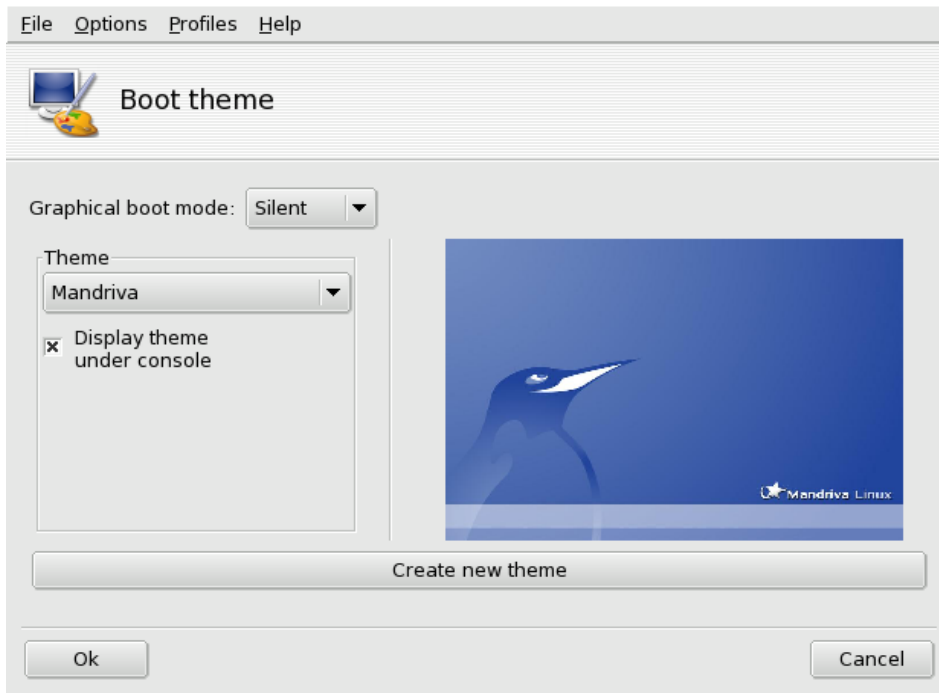
Figure 8-3. DrakBoot Theme Window

The boot theme setting will have no effect if your system isn't set to boot using the graphical mode. Please refer to *Changing your Boot-up Configuration*, page 93, for more information on setting the boot mode.

If you only have one theme available, you may install the `bootsplash-themes` package which you will find in `contribs`. Other themes are also available on the web.

The Create new theme button allows you to fully customize an existing boot theme or create a new boot theme from scratch. Adjust the parameters to your liking and save it. It will then be accessible in the available Themes list.

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