

Quick Startup Guide

Mandrake Linux 9.1



<http://www.MandrakeSoft.com>

Quick Startup Guide: Mandrake Linux 9.1

Published 2003-03-24

Copyright © 2003 MandrakeSoft SA

by Camille Bégnis, Christian Roy, Fabian Mandelbaum, Joël Pomerleau, Vincent Danen, Roberto Rosselli del Turco, Stefan Siegel, Marco De Vitis, Alice Lafox, Kevin Lecouvey, Christian Georges, John Rye, Robert Kulagowski, Pascal Rigaux, Frédéric Crozat, Laurent Montel, Damien Chaumette, Till Kamppeter, Guillaume Cottenceau, Jonathan Gotti, Christian Belisle, Sylvestre Taburet, Thierry Vignaud, Juan Quintela, Pascal Lo Re, Kadjo N'Doua, Mark Walker, Roberto Patriarca, Patricia Pichardo Bégnis, Alexis Gilliot, Arnaud Desmons, Wolfgang Bornath, Alessandro Baretta, Aurélien Lemaire, Daouda Lo, Florent Villard, Gwenole Beauchesne, Giuseppe Ghibò, Joël Wardenski, and Debora Rejnharc Mandelbaum

Legal Notice

This manual is protected under **MandrakeSoft** intellectual property rights. Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.1 or any later version published by the Free Software Foundation; with the invariant sections being *About Mandrake Linux*, page i, with the front-cover texts being listed below, and with no back-cover texts. A copy of the license is available on the GNU site (<http://www.gnu.org/licenses/fdl.html>).

Front-cover texts:

MandrakeSoft March 2003

<http://www.mandrakesoft.com/>

Copyright © 1999, 2000, 2001, 2002, 2003 by MandrakeSoft S.A.
and MandrakeSoft Inc.

“Mandrake”, “Mandrake Linux” and “MandrakeSoft” are registered trademarks of **MandrakeSoft S.A.**; Linux is a registered trademark of Linus Torvalds; *UNIX* is a registered trademark of The Open Group in the United States and other countries. All other trademarks and copyrights are the property of their respective owners.

Tools Used in The Making of This Manual

This manual was written in XML *DocBook*. *Borges* (<http://linux-mandrake.com/en/doc/project/Borges/>) was used to manage the set of files involved. The XML source files were processed by *openjade* and *jadetex* using Norman Walsh’s custom stylesheets. Screen-shots were taken using *xwd* or *GIMP* and converted with *convert* (from the *ImageMagick* package). All this software is available on your **Mandrake Linux** distribution, and all parts of it are free software.

Table of Contents

Preface	i
1. About Mandrake Linux	i
1.1. Contact Mandrake Community	i
1.2. Support Mandrake Linux	i
1.3. Contribute to Mandrake Linux	i
1.4. Purchasing Mandrake Products	ii
2. About this Quick-Startup Guide	ii
1. Installation Guide Warning	1
2. Before Installation	3
2.1. Configuring your BIOS	3
2.2. Creating a Floppy Boot Disk	3
2.2.1. Creating a Boot Disk Under Windows	4
2.2.2. Creating a Floppy Boot Disk Under GNU/Linux	4
2.3. Supported Hardware	5
2.3.1. What Is Not Supported	5
3. Installation with DrakX	7
3.1. Introduction to the Mandrake Linux Installer	7
3.2. Choosing Your Language	8
3.3. License Terms of the Distribution	10
3.4. Installation Class	10
3.5. Configuring your Mouse	11
3.6. Configuring the Keyboard	12
3.7. Security Level	12
3.8. Selecting the Mount Points	13
3.9. Choose Partitions to Be Formatted	14
3.10. Choose Packages to Install	15
3.10.1. Choose Package Groups to Install	15
3.10.2. Choose Individual Packages to Install	16
3.11. Multiple CD-ROM Installation	17
3.12. Root Password	17
3.13. Adding a User	18
3.14. Installing a Bootloader	19
3.15. Check Miscellaneous Parameters	20
3.15.1. Summary	20
3.15.2. Time Zone Options	21
3.15.3. Installing a Bootloader	22
3.15.4. Setup of The Bootloader Entries	22
3.15.5. Configuring X, the Graphical Server	23
3.15.6. Configure your Network	24
3.15.7. Selecting Available Services at Boot Time	25
3.16. Installing Updates from the Internet	26
3.17. It's Finished!	26
3.18. How to Uninstall Linux	27

List of Figures

2-1. The Rawrite Program 4

3-1. Very First Installation Welcome Screen 7

3-2. Available Installation Options 7

3-3. Choosing the Default Language 9

Preface

1. About Mandrake Linux

Mandrake Linux is a *GNU/Linux* distribution supported by **MandrakeSoft** 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. **MandrakeSoft**'s two pillars are open source and collaborative work.

1.1. Contact Mandrake Community

Following are various Internet links pointing you to various **Mandrake Linux** related sources. If you wish to know more about the **MandrakeSoft** company, connect onto its web site (<http://www.mandrakesoft.com/>). You can also check out the **Mandrake Linux** distribution web site (<http://www.mandrakelinux.com/>) and all its derivatives.

Let us now speak about our open help platform. MandrakeExpert (<http://www.mandrakeexpert.com/>) is not just another web site where people help others with their computer problems in exchange for up-front fees, payable regardless of the quality of the service received. It offers a new experience based on trust and the pleasure of rewarding others for their contributions.

We also invite you to participate to the various mailing lists (<http://www.mandrakelinux.com/en/flists.php3>), where the **Mandrake Linux** community demonstrates its vivacity and keenness.

Finally, do not forget to connect to MandrakeSecure (<http://www.mandrakesecure.net/>). It gathers all security-related material about **Mandrake Linux** distributions. You will notably find security and bug advisories, as well as security and privacy-related articles. A must for any server administrator or user concerned about security.

1.2. Support Mandrake Linux

By popular request, **MandrakeSoft** offers its customers the possibility to participate financially to **MandrakeSoft**'s success. Through the Mandrake Users Club (<http://www.mandrakelinux.com/en/club/>) and Mandrake Corporate Club (<http://www.mandrakelinux.com/corporateclub>) you can:

- download commercial software normally only available in retail packs, such as software drivers, commercial applications, freeware, and demo versions;
- vote and propose new software through a volunteer-run RPM voting system;
- obtain discounts for products and services on MandrakeStore (<http://www.mandrakestore.com>);
- access a special MandrakeOnline offer with discounts, additional free accounts for gold (and higher) level members, and no advertising!
- obtain a copy of StarOffice 6.0 available to Silver members and above;
- access a better mirror list, exclusive to Club members (**experimental**);
- read multilingual forums and articles.

At MandrakeClub, your voice will be heard!

By financing **MandrakeSoft** through the MandrakeClub you will directly enhance the **Mandrake Linux** distribution and help us provide the best possible *GNU/Linux* desktop to our users.

1.3. Contribute to Mandrake Linux

The skills of the many talented folks who use **Mandrake Linux** can be very useful in the making of the **Mandrake 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 **MandrakeSoft**: find the one that most appeals to you and offer your help to the main developer(s).

- internationalization: you can help us in the translation of web pages, programs and their respective documentation.
- documentation: last but not least, the manual you are currently reading requires a lot of work to stay up-to-date in regards with the rapid evolution of the system.

Consult the contributors page (<http://www.mandrakesoft.com/labs/>) to learn more about how you can contribute to the evolution of **Mandrake Linux**.

1.4. Purchasing Mandrake Products

Mandrake Linux fans wishing to purchase on-line may do so simply by accessing our MandrakeStore (<http://www.mandrakestore.com/>) e-commerce platform. You will not only find **Mandrake Linux** software, operating systems and network tools (*Multi Network Firewall*), but also special subscription offers, support, third-party software and licenses, documentation, *GNU/Linux*-related books, as well as other **MandrakeSoft** goodies.

2. About this Quick-Startup Guide

Welcome, and thank you for choosing **Mandrake Linux**! This *Quick-Startup Guide* will help you understand the installation basics of a *GNU/Linux* distribution, give you pointers as to what you need to do before actually installing the **Mandrake Linux** OS, as well as initiate you to the *GNU/Linux* environment.

"Installation Guide Warning", page 1 will inform you about technical procedures you should do (this is not mandatory, but let's just say we very highly recommend you follow the instructions in this chapter!). We talk about data back-up, scandisk, and the like.

In *"Before Installation"*, page 3, we cover topics such as BIOS configuration, boot disks and supported hardware.

Then comes the chapter you have been waiting for: *"Installation with DrakX"*, page 7. It is designed to guide you during the installation process.

Good luck!

Chapter 1. Installation Guide Warning

This quick-start guide only covers most common steps of the installation. If you plan on using *Windows* as well as *GNU/Linux* in dual-boot (meaning being able to access either OS on the same computer), please note that it is easier to install *Windows* **before** *GNU/Linux*. If *Windows* is already set up on your system, and you have never installed *GNU/Linux* before, *DrakX* — **Mandrake Linux**'s installation program — will have to resize your *Windows* partition. This operation can be harmful to your data. Therefore, you **must** perform the following steps before proceeding:

- you must run *scandisk* on your *Windows* computer. The resizing program can detect some obvious errors, but *scandisk* is better suited for this task;



Before using *scandisk* make sure your screensaver is turned off. To obtain even better result, run *scandisk* in *Windows*'s "Safe Mode".

- for maximum data security, you should also run *defrag* on your partition. This further reduces the risk of data loss. This is not mandatory, but it is highly recommended and doing so will make the resizing process much faster and easier;
- the ultimate insurance against problems is to always **back up your data!** Of course, back up your data on **another** computer, upload your back-ups on the web, on a friend's computer, etc. **Do not** back it up on the computer on which you want to install *GNU/Linux*.

If neither *scandisk* nor *defrag* are installed within *Windows*, please refer to the *Windows* documentation for instructions on installing them.



NTFS Partitions. *Windows 2000*, *NT* or *XP* users should be careful: it is possible to resize NTFS partitions with *GNU/Linux*, but support for it is still experimental. It is highly recommended to back up your data before starting installation.

Chapter 2. Before Installation

This chapter covers issues to be addressed **before** you start your new **Mandrake Linux** installation. Make sure you read it completely since it will save you a lot of work. Also back up your data (on a different disk than the one you will install the system into) and plug in and turn on all your external devices (keyboard, mouse, printer, scanner, etc.).

2.1. Configuring your BIOS

The *BIOS* (*Basic Input/Output System*) is used to find the device on which the operating system is located and starts it up. It is also used for the initial hardware configuration and hardware low-level access.

The appearance of *plug'n'play* devices and their widespread use means that all modern *BIOS* can initialize these devices. In order for *Linux* to recognize *plug'n'play* devices, your *BIOS* must be configured to initialize them.

Changing your *BIOS*' settings is usually performed by holding down the **Del** key (some *BIOS*es use the **F2**, **F10** or **Esc** keys instead of the **Del** one) right after the computer is switched on. Unfortunately, there are many types of *BIOS*es, therefore you will have to look for the appropriate option by yourself. The option to look for is often called PNP OS installed (or Plug'n'Play OS installed). Set this option to No and the *BIOS* will then initialize any *plug'n'play* devices. That can help *Linux* recognize some devices in your machine, which it would not be able to initialize otherwise.

All recent systems can boot from a CD-ROM. Look for Boot sequence in the *BIOS*' features setup, and set it to CD-ROM. If your system cannot boot from CD-ROM you will have to use a floppy.



If you want to use a parallel printer connected locally to your machine, make sure that the parallel port mode is set to ECP+EPP (or at least to one of ECP or EPP) and not to SPP, unless you have a **really** old printer. If the parallel port is not set this way you might still be able to print, but your printer will not be detected automatically and you will have to configure it by hand. Also make sure the printer is properly connected to your machine and powered on beforehand.

2.2. Creating a Floppy Boot Disk

If you cannot boot from the CD-ROM you will need to create a **floppy boot disk**. The CD-ROM contains all of the image files and utility programs needed to do so.

The floppy boot disk images are in the CD-ROM's `images/` directory.

Following is a list of different images and their respective installation methods:

`cdrom.img`

To install from a local IDE or SCSI CD-ROM drive. This image must be used in cases where you cannot boot your computer directly from the CD-ROM.

`network.img`

To install from an NFS, FTP, HTTP repository on your local LAN or via a PPPoE (DSL lines) network connection. The network configuration of the machine on which you wish to install may be manual or automatic.

`pcmcia.img`

Use this image if the installation medium is reached through a PCMCIA card (network, CD-ROM, etc.).



Some PCMCIA devices now use common network drivers. In case the PCMCIA device does not work, try with `network.img`.

`hd.img`

Use this image if you want to perform the installation from a hard disk. You need to copy the contents of the CD onto the hard drive (either on a FAT ext2FS, ext3FS or ReiserFS partition).

`hdcrom_usb.img`

This image allows you to perform an installation through an USB storage device, such as an external CD-ROM or hard drive.

`network_gigabit_usb.img`

This installation image allows to install from an NFS, FTP, HTTP repository using a gigabit network adapter or an USB one.

The `images/alternatives/*` directory provides more or less the same boot images, but with a different (older) kernel. Actually it provides a 2.2 kernel (**Mandrake Linux** 8.2 onwards uses kernel 2.4) which might help you to get started on older systems.

2.2.1. Creating a Boot Disk Under Windows

In order to do so, you need to use the `rawwrite` program. You can find it in the CD-ROM's `dosutils/` directory of the.

You may have noticed that there is a *DOS* version of the same program called `rawrite`. It is, in fact, the original version of the program. `rawwrite` is a graphical front-end to it.

Start the program, as shown in figure 2-1.

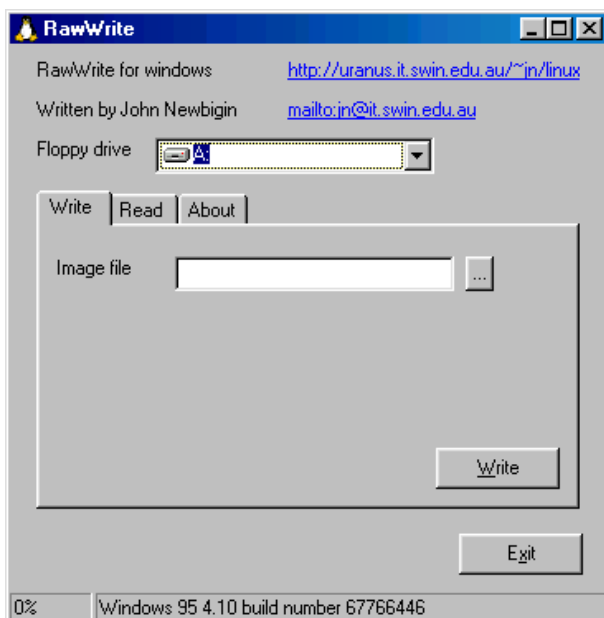


Figure 2-1. The Rawrite Program

Select the boot image to copy and the target device. In almost all cases, the target device is the A: drive (that is, the first floppy disk drive).

Then, if you have not already done so, insert an empty disk into your chosen floppy drive and click on the Write button. When completed, click on the Exit button: now you have a floppy boot disk to install your **Mandrake Linux** distribution.

2.2.2. Creating a Floppy Boot Disk Under GNU/Linux

If you already have *GNU/Linux* installed (another version, or on another machine, a friend's computer who lent you his **Mandrake Linux** CD), then carry out the following steps:

1. mount the CD-ROM. Let us suppose that the mount point is `/mnt/cdrom`;
2. log in as root (to do so, open a terminal window, run the `su` command and enter your root password);
3. insert an empty diskette into the floppy drive and type:

```
$ dd if=/mnt/cdrom/images/cdrom.img of=/dev/fd0 bs=512
```



Replace `/dev/fd0` by `/dev/fd1` if you are using the second floppy drive and, of course, the name of the image with the one you want. When this operation is completed, your floppy boot disk will be ready to use on your floppy disk drive.

2.3. Supported Hardware

Mandrake Linux can handle a large number of hardware devices, and the list is far too long to be quoted in its entirety here. Nevertheless, some of the steps described here will help you to find out if your hardware is compatible. It will also guide you to configure some problematic devices.

You may consult an up-to-date list of supported hardware on our web site (<http://www.mandrakelinux.com/en/hardware.php3>).

USB devices: support for USB 1.0 and USB 2.0 is now extensive. Most peripherals are fully supported. You can get the list of supported hardware on the Linux-USB Device (<http://www.qbik.ch/usb/devices/>) site.



Legal disclaimer: the **Mandrake Linux Supported Hardware List** contains information about hardware devices that have been tested and/or have been reported to function properly with **Mandrake Linux**. Due to the wide variety of system configurations, **MandrakeSoft** cannot guarantee that a specific device will work properly on your system.

2.3.1. What Is Not Supported

Some types of hardware cannot presently be handled by *GNU/Linux*, either because the support is still in an experimental stage, because nobody has written a driver for the devices in question, or because it has been decided, for valid reasons, that they cannot be supported. For example:

- *winmodems*, also called controller-less modems or software modems. Support for these peripherals is currently very sparse. Drivers do exist, but are in binary form and available only for a limited range of kernel versions.

If you have a PCI modem, look at the output of `cat /proc/pci` run as the root user. This will tell you the I/O port and the IRQ of the device. Then, use the `setserial` command (for our example, the I/O address is `0xb400`, the IRQ is 10 and the modem will be the 4th serial device) as follows:

```
setserial /dev/ttyS3 port 0xb400 irq 10 UART 16550A
```

Then try to query your modem using `minicom` or `kppp`. If it does not work, you may have a software modem. If it does work, create the file `/etc/rc.d/rc.setserial` and place the appropriate `setserial` command line in it.

A recent project is trying to make software modems work under *GNU/Linux*. If you happen to have this type of hardware in your machine, you may have a look at `linmodems dot org` (<http://linmodems.org/>) and `Winmodems are not modems; Linux information page` (<http://www.idir.net/~gromitkc/winmodem.html>) web sites.

Chapter 3. Installation with DrakX

3.1. Introduction to the Mandrake Linux Installer

DrakX is **Mandrake Linux**'s installation program. Its ease of use has been enhanced with a new graphical user interface, and a new installation scheme which separates installation and system configuration. With *DrakX*, it doesn't matter whether you're a new user to **Mandrake Linux** or an old pro – *DrakX*'s job is to give you a smooth installation and an easy transition into **Mandrake Linux**.



DrakX will work best if all of your hardware is connected to the computer and powered up during the installation. Printers, modems, scanners and joysticks are just a few examples of peripherals that *DrakX* will automatically detect and configure for you as **Mandrake Linux** is being installed.



Figure 3-1. Very First Installation Welcome Screen

When you begin, the first screen that comes up will present some information and give you installation options. (figure 3-1). Doing nothing will simply begin the installation in normal or "linux" mode. The next few paragraphs will go over some options and parameters that you can pass to the install program if you run into problems.

Pressing **F1** will open a help screen (figure 3-2). Here are some useful options to choose from:

```

Welcome to Mandrake Linux install help

In most cases, the best way to get started is to simply press the <Enter> key.
If you experience problems with standard install, try one of the following
install types (type the highlighted text and press <Enter>):

o vga1o for low resolution graphical installation.
o text for text installation instead of the graphical one.
o linux for standard graphical installation at normal resolution.
o expert for expert graphical installation at normal resolution.

To use this CD to repair an already installed system type rescue
followed by <Enter>.

You can also pass some <specific kernel options> to the Linux kernel.
For example, try linux mem=128M if your system has 128Mb of RAM but the default
kernel (2.4.21pre4-8mdkBOOT) does not detect it correctly.
NOTE: You cannot pass options to modules (SCSI, ethernet card) or devices
such as CD-ROM drives in this way. If you need to do so, use expert mode.

[F1-Help] [F2-Advanced Help] [F3-Main]
boot: _

```

Figure 3-2. Available Installation Options

- **vga1o**: if you tried a default installation and did not see the graphical interface as shown below in figure 3-3, you can try to run the installation in low resolution mode. This happens with certain types of graphics cards, so with **Mandrake Linux** we give you a number of options to work around problems with older hardware. To try the installation in low resolution mode, type **vga1o** at the prompt.
- **text**: if your video card is very old and graphical installation does not work at all, you can always choose the text mode installation. Because all video cards can display text, this is the “installation of last resort”. Don’t worry though – it’s not likely that you’ll need to use the text install.
- **noauto**: in some rare cases, your PC may appear to freeze or lock-up during the hardware detection phase. If that happens, then adding the word **noauto** as a parameter will tell the install program to bypass hardware detection. Because *DrakX* will not scan for hardware, you will need to manually specify hardware parameters later in the installation. The **noauto** parameter can be added to the previous modes, so you may end up specifying:
 boot: vga1o noauto
 to perform a low resolution graphical install without *DrakX* performing a hardware scan.
- **kernel options**: Kernel options usually aren’t required for most machines. There are a few cases of motherboards incorrectly reporting the amount of memory installed due to bugs in the design or in the BIOS. If you need to manually specify the amount of DRAM installed in your PC, use the **mem= xxxM** parameter. For example, to start the installation in normal mode with a computer having 256 MB of memory, your command line would look like this:

```
boot: linux mem=256M
```

Now that we’ve gone over what **might** go wrong, let’s move on to the actual installation process. When the installer starts, you’ll see a nice graphical interface (figure 3-3). On the left will be the various installation steps. You can notice installation will occur in two distinct main steps: installation, then configuration. The list on the left shows all the steps. The current step is marked with an highlighted bullet.

Each step may present various screens. Navigation between those screens is made through the Next -> and <- Previous buttons. Additionally an Advanced button may be available to show more advanced options.



The Help button will show explanations for the current step.

3.2. Choosing Your Language

The first step is to choose your preferred language.

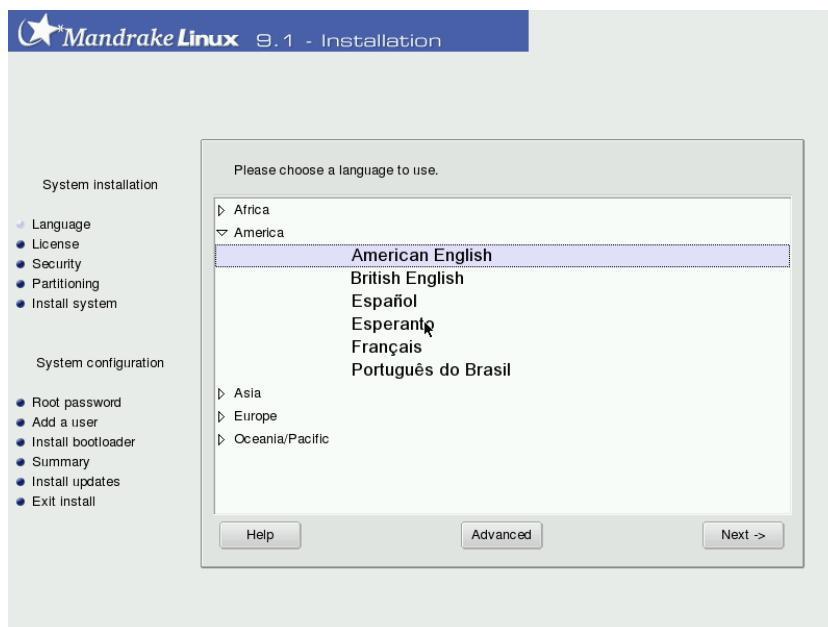


Figure 3-3. Choosing the Default Language

Your choice of preferred language will affect the language of the documentation, the installer and the system in general. Select first the region you are located in, and then the language you speak.

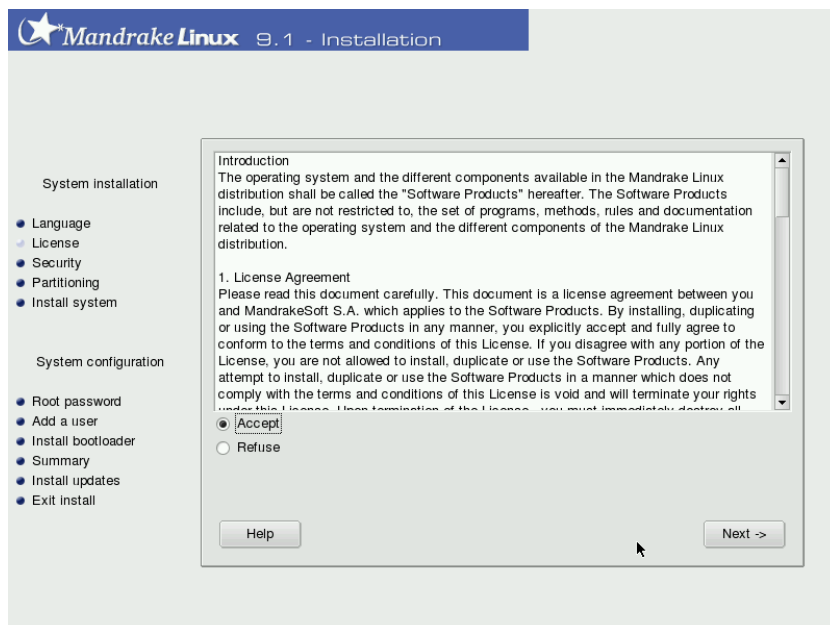
Clicking on the Advanced button will allow you to select other languages to be installed on your workstation, thereby installing the language-specific files for system documentation and applications. For example, if you will host users from Spain on your machine, select English as the default language in the tree view and Español in the Advanced section.

Note that you're not limited to choosing a single additional language. You may choose several ones, or even install them all by selecting the All languages box. Selecting support for a language means translations, fonts, spell checkers, etc. for that language will be installed. Additionally, the Use Unicode by default checkbox allows you to force the system to use unicode (UTF-8). Note however that this is an experimental feature. If you select different languages requiring different encoding the unicode support will be installed anyway.



To switch between the various languages installed on the system, you can launch the `/usr/sbin/locale-drake` command as root to change the language used by the entire system. Running the command as a regular user will only change the language settings for that particular user.

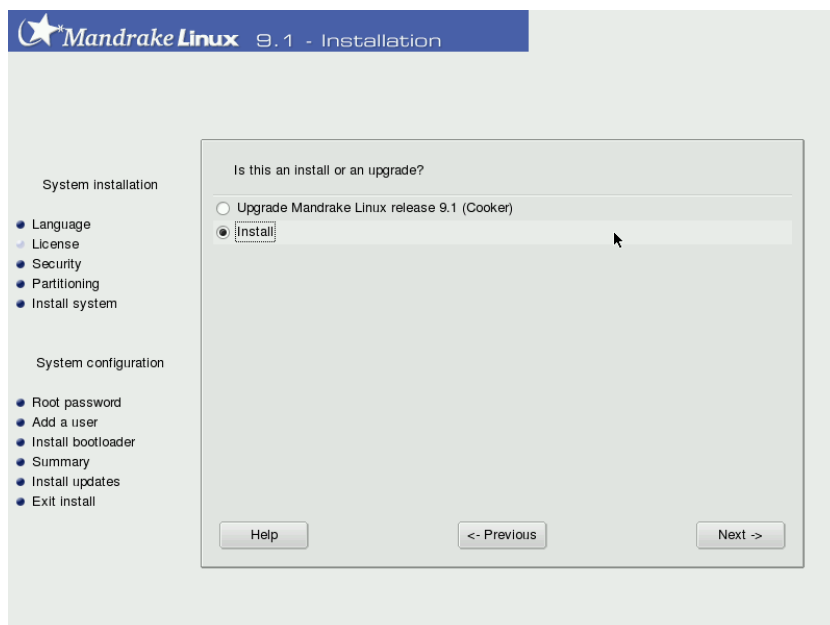
3.3. License Terms of the Distribution



Before continuing, you should carefully read the terms of the license. It covers the entire **Mandrake Linux** distribution. If you do agree with all the terms in it, check the Accept box. If not, simply turn off your computer.

3.4. Installation Class

This step is activated only if an old *GNU/Linux* partition has been found on your machine.



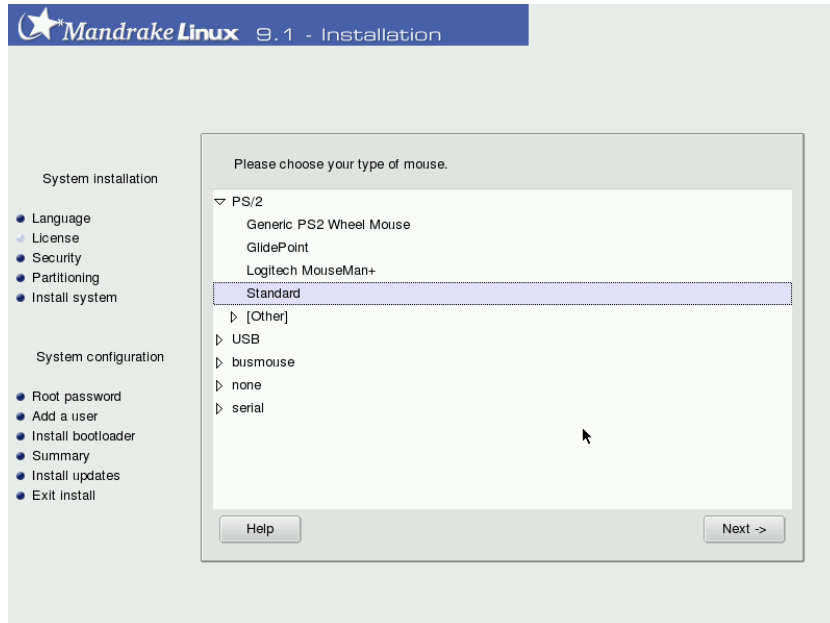
DrakX now needs to know if you want to perform a new install or an upgrade of an existing **Mandrake Linux** system:

- **Install:** For the most part, this completely wipes out the old system. If you wish to change how your hard drives are partitioned, or change the file system, you should use this option. However, depending on your partitioning scheme, you can prevent some of your existing data from being over-written.
- **Upgrade:** this installation class allows you to update the packages currently installed on your **Mandrake Linux** system. Your current partitioning scheme and user data is not altered. Most of other configuration steps remain available, similar to a standard installation.



Using the “Upgrade” option should work fine on **Mandrake Linux** systems running version 8.1 or later. Performing an Upgrade on versions prior to **Mandrake Linux** version 8.1 is not recommended.

3.5. Configuring your Mouse



Usually, *DrakX* has no problems detecting the number of buttons on your mouse. If it does, it assumes you have a two-button mouse and will configure it for third-button emulation. The third-button mouse button of a two-button mouse can be “pressed” by simultaneously clicking the left and right mouse buttons. *DrakX* will automatically know whether your mouse uses a PS/2, serial or USB interface.

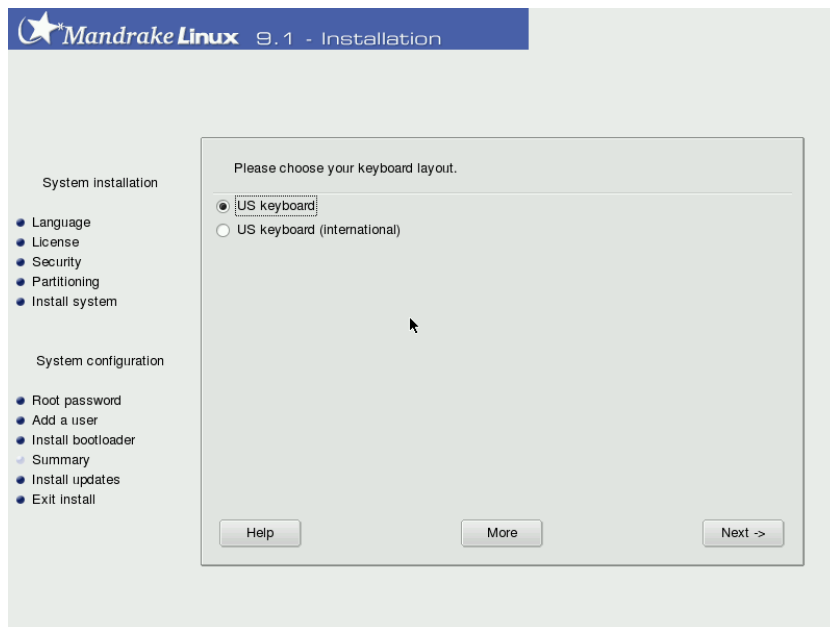
If for some reason you wish to specify a different type of mouse, select it from the list provided.

If you choose a mouse other than the default, a test screen will be displayed. Use the buttons and wheel to verify that the settings are correct and that the mouse is working correctly. If the mouse is not working well, press the space bar or **Return** key to cancel the test and to go back to the list of choices.



Wheel mice are occasionally not detected automatically, so you will need to select your mouse from a list. Be sure to select the one corresponding to the port that your mouse is attached to. After selecting a mouse and pressing the Next -> button, a mouse image is displayed on-screen. Scroll the mouse wheel to ensure that it is activated correctly. Once you see the on-screen scroll wheel moving as you scroll your mouse wheel, test the buttons and check that the mouse pointer moves on-screen as you move your mouse.

3.6. Configuring the Keyboard

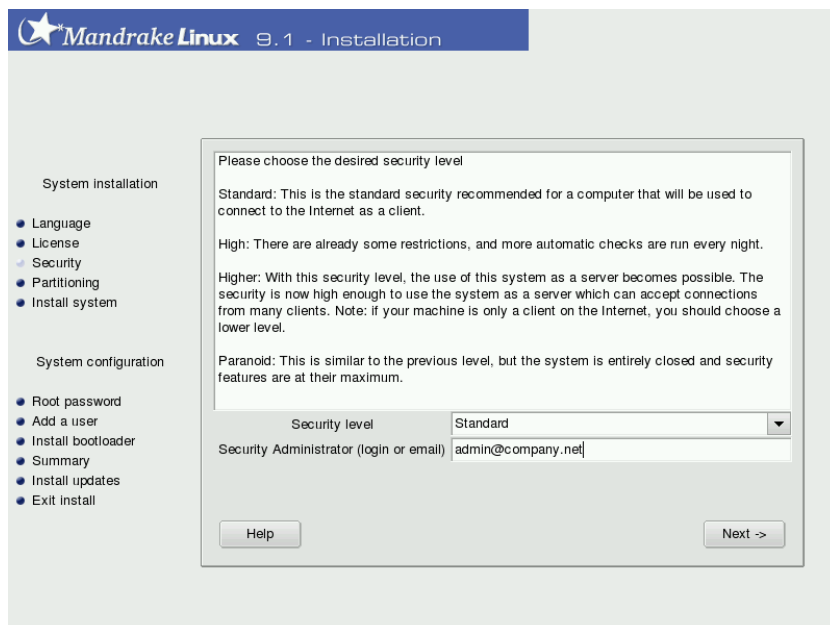


Depending on the default language you chose in Section *Choosing Your Language*, page 8, *DrakX* will automatically select a particular type of keyboard configuration. However, you may not have a keyboard that corresponds exactly to your language: for example, if you are an English speaking Swiss person, you may have a Swiss keyboard. Or if you speak English but are located in Québec, you may find yourself in the same situation where your native language and keyboard do not match. In either case, this installation step will allow you to select an appropriate keyboard from a list.

Click on the **More** button to be presented with the complete list of supported keyboards.

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

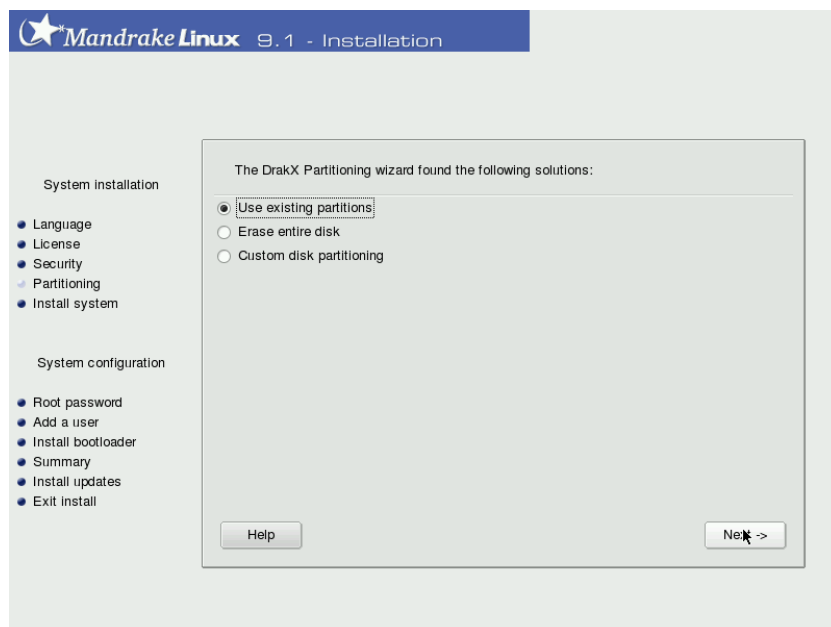
3.7. Security Level



At this point, *DrakX* will allow you to choose the security level desired for the machine. As a rule of thumb, the security level should be set higher if the machine will contain crucial data, or if it will be a machine directly exposed to the Internet. The trade-off of a higher security level is generally obtained at the expense of ease of use.

If you do not know what to choose, stay with the default option.

3.8. Selecting the Mount Points



At this point, you need to decide where you want to install the **Mandrake Linux** operating system on your hard drive. If your hard drive is empty or if an existing operating system is using all the available space you will have to partition the drive. Basically, partitioning a hard drive consists of logically dividing it to create the space needed to install your new **Mandrake Linux** system.

Because the process of partitioning a hard drive is usually irreversible and can lead to lost data if there is an existing operating system already installed on the drive, partitioning can be intimidating and stressful if you are an inexperienced user. Fortunately, *DrakX* includes a wizard which simplifies this process. Before continuing with this step, read through the rest of this section and above all, take your time.

Depending on your hard drive configuration, several options are available:

- **Use free space:** this option will perform an automatic partitioning of your blank drive(s). If you use this option there will be no further prompts.
- **Use existing partition:** the wizard has detected one or more existing Linux partitions on your hard drive. If you want to use them, choose this option. You will then be asked to choose the mount points associated with each of the partitions. The legacy mount points are selected by default, and for the most part it's a good idea to keep them.
- **Use the free space on the Windows partition:** if **Microsoft Windows** is installed on your hard drive and takes all the space available on it, you will have to create free space for Linux. To do so, you can delete your **Microsoft Windows** partition and data (see "Erase entire disk" solution) or resize your **Microsoft Windows** FAT partition. Resizing can be performed without the loss of any data, **provided you have previously defragmented the Windows partition and that it uses the FAT format. Backing up your data is strongly recommended.** Using this option is recommended if you want to use both **Mandrake Linux** and **Microsoft Windows** on the same computer.

Before choosing this option, please understand that after this procedure, the size of your **Microsoft Windows** partition will be smaller than when you started. You will have less free space under **Microsoft Windows** to store your data or to install new software.

- **Erase entire disk:** if you want to delete all data and all partitions present on your hard drive and replace them with your new **Mandrake Linux** system, choose this option. Be careful, because you will not be able to undo your choice after you confirm.



If you choose this option, **all** data on your disk will be deleted.

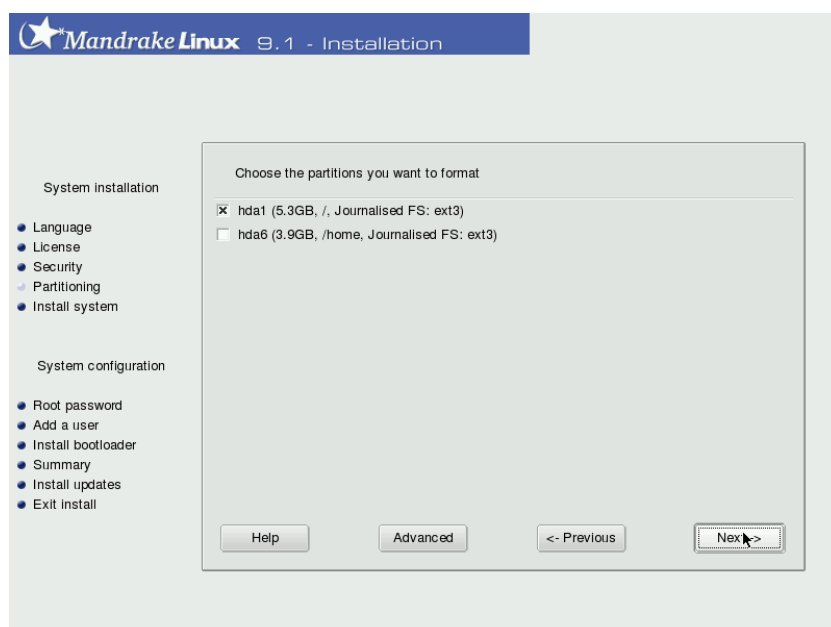
- Remove Windows: this will simply erase everything on the drive and begin fresh, partitioning everything from scratch. **All** data on your disk will be lost.



If you choose this option, **all** data on your disk will be lost.

- Custom disk partitioning: choose this option if you want to manually partition your hard drive. Be careful — it is a powerful but dangerous choice and you can very easily lose all your data. That's why this option is really only recommended if you have done something like this before and have some experience. For more instructions on how to use the *DiskDrake* utility, refer to the *Managing Your Partitions* section in the *Starter Guide*.

3.9. Choose Partitions to Be Formatted



Any partitions that have been newly defined must be formatted for use (formatting means creating a file system).

At this time, you may wish to reformat some already existing partitions to erase any data they contain. If you wish to do that, please select those partitions as well.

Please note that it is not necessary to reformat all pre-existing partitions. You must reformat the partitions containing the operating system (such as `/`, `/usr` or `/var`) but you do not have to reformat partitions containing data that you wish to keep (typically `/home`).

Please be careful when selecting partitions. After formatting, all data on the selected partitions will be deleted and you will not be able to recover it.

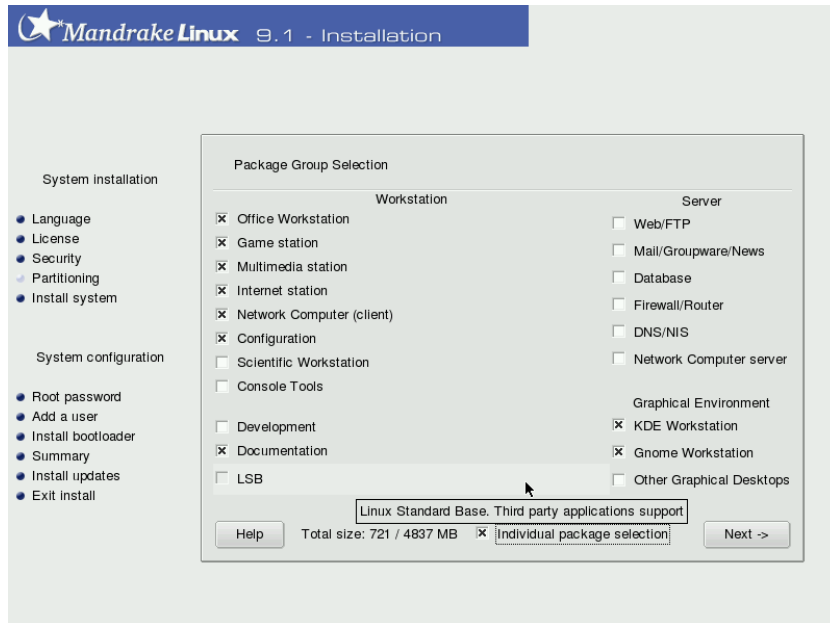
Click on Next -> when you are ready to format partitions.

Click on <- Previous if you want to choose another partition for your new **Mandrake Linux** operating system installation.

Click on Advanced if you wish to select partitions that will be checked for bad blocks on the disk.

3.10. Choose Packages to Install

3.10.1. Choose Package Groups to Install



It is now time to specify which programs you wish to install on your system. There are thousands of packages available for **Mandrake Linux**, and to make it simpler to manage the packages have been placed into groups of similar applications.

Packages are sorted into groups corresponding to a particular use of your machine. **Mandrake Linux** has four predefined installations available. You can think of these installation classes as containers for various packages. You can mix and match applications from the various groups, so a “Workstation” installation can still have applications from the “Development” group installed.

1. Workstation: if you plan to use your machine as a workstation, select one or more of the applications that are in the workstation group.
2. Development: if plan on using your machine for programming, choose the appropriate packages from that group.
3. Server: if your machine is intended to be a server, select which of the more common services you wish to install on your machine.
4. Graphical Environment: this is where you will choose your preferred graphical environment. At least one must be selected if you want to have a graphical interface available.



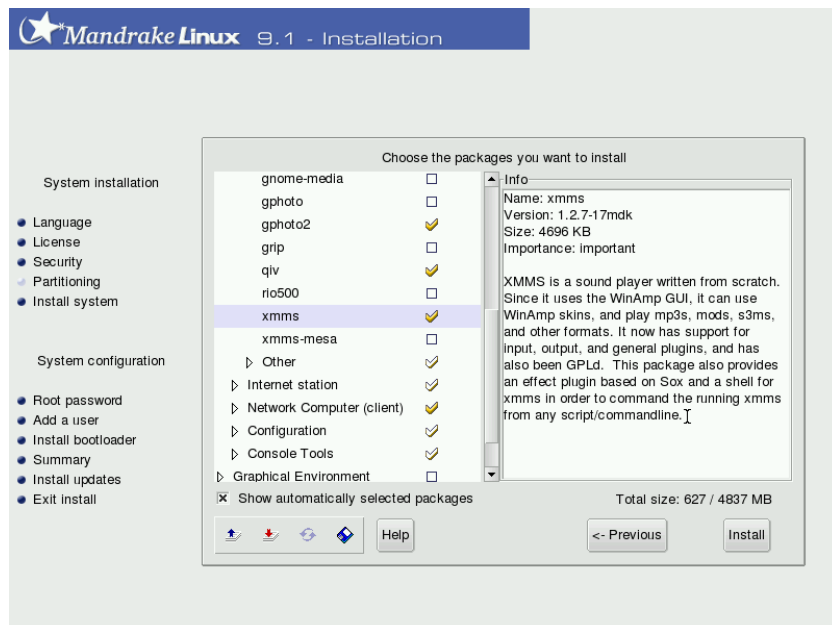
Moving the mouse cursor over a group name will display a short explanatory text about that group. If you unselect all groups when performing a regular installation (as opposed to an upgrade), a dialog will pop up proposing different options for a minimal installation:

- With X: install the minimum number of packages possible to have a working graphical desktop.
- With basic documentation: installs the base system plus basic utilities and their documentation. This installation is suitable for setting up a server.
- Truly minimal install: will install the absolute minimum number of packages necessary to get a working Linux system. With this installation you will only have a command line interface. The total size of this installation is about 65 megabytes.

You can check the Individual package selection box, which is useful if you are familiar with the packages being offered or if you want to have total control over what will be installed.

If you started the installation in Upgrade mode, you can unselect all groups to avoid installing any new package. This is useful for repairing or updating an existing system.

3.10.2. Choose Individual Packages to Install



If you told the installer that you wanted to individually select packages, it will present a tree containing all packages classified by groups and subgroups. While browsing the tree, you can select entire groups, subgroups, or individual packages.

Whenever you select a package on the tree, a description appears on the right to let you know the purpose of the package.



If a server package has been selected, either because you specifically chose the individual package or because it was part of a group of packages, you will be asked to confirm that you really want those servers to be installed. By default **Mandrake Linux** will automatically start any installed services at boot time. Even if they are safe and have no known issues at the time the distribution was shipped, it is entirely possible that that security holes were discovered after this version of **Mandrake Linux** was finalized. If you do not know what a particular service is supposed to do or why it is being installed, then click No. Clicking Yes will install the listed services and they will be started automatically by default during boot.

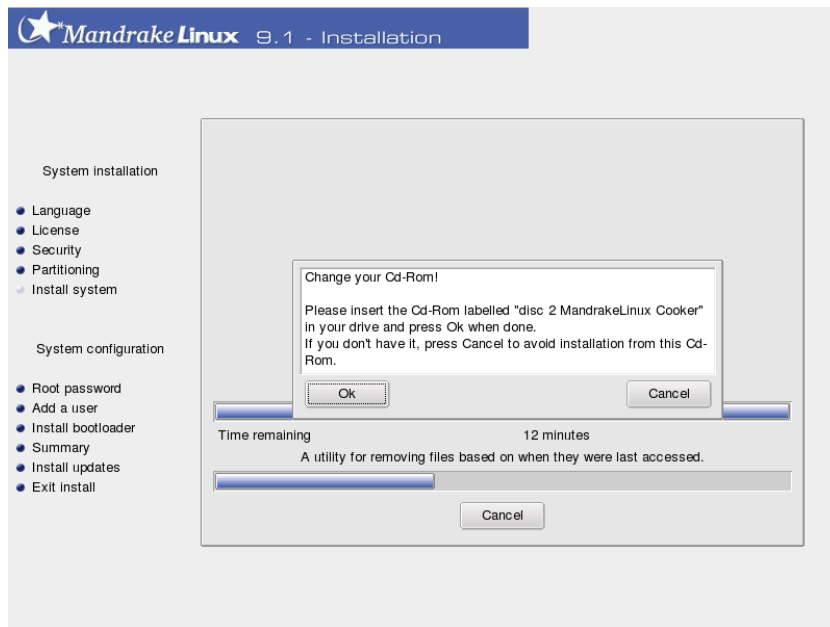


The Automatic dependencies option is used to disable the warning dialog which appears whenever the installer automatically selects a package to resolve a dependency issue. Some packages have relationships between each other such that installation of a package requires that some other program is also required to be installed. The installer can determine which packages are required to satisfy a dependency to successfully complete the installation.



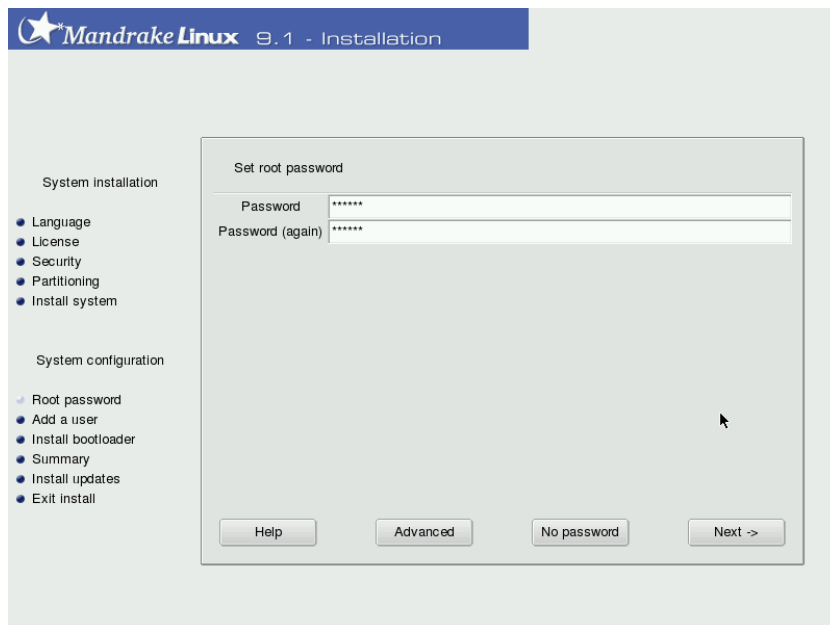
The tiny floppy disk icon at the bottom of the list allows you to load a package list created during a previous installation. This is useful if you have a number of machines that you wish to configure identically. Clicking on this icon will ask you to insert a floppy disk previously created at the end of another installation. See the second tip of last step on how to create such a floppy.

3.11. Multiple CD-ROM Installation



The **Mandrake Linux** installation is distributed on several CD-ROMs. *DrakX* knows if a selected package is located on another CD-ROM so it will eject the current CD and ask you to insert the correct CD as required.

3.12. Root Password



This is the most crucial decision point for the security of your *GNU/Linux* system: you have to enter the root password. Root is the system administrator and is the only user authorized to make updates, add users, change the overall system configuration, and so on. In short, root can do everything! That is why you must choose a

password that is difficult to guess – *DrakX* will tell you if the password that you chose too easy. As you can see, you are not forced to enter a password, but we strongly advise you against this. *GNU/Linux* is just as prone to operator error as any other operating system. Since root can overcome all limitations and unintentionally erase all data on partitions by carelessly accessing the partitions themselves, it is important that it be difficult to become root.

The password should be a mixture of alphanumeric characters and at least 8 characters long. Never write down the root password — it makes it far too easy to compromise a system.

One caveat — do not make the password too long or complicated because you must be able to remember it!

The password will not be displayed on screen as you type it in. To reduce the chance of a blind typing error you will need to enter the password twice. If you do happen to make the same typing error twice, this “incorrect” password will be the one you will have use the first time you connect.

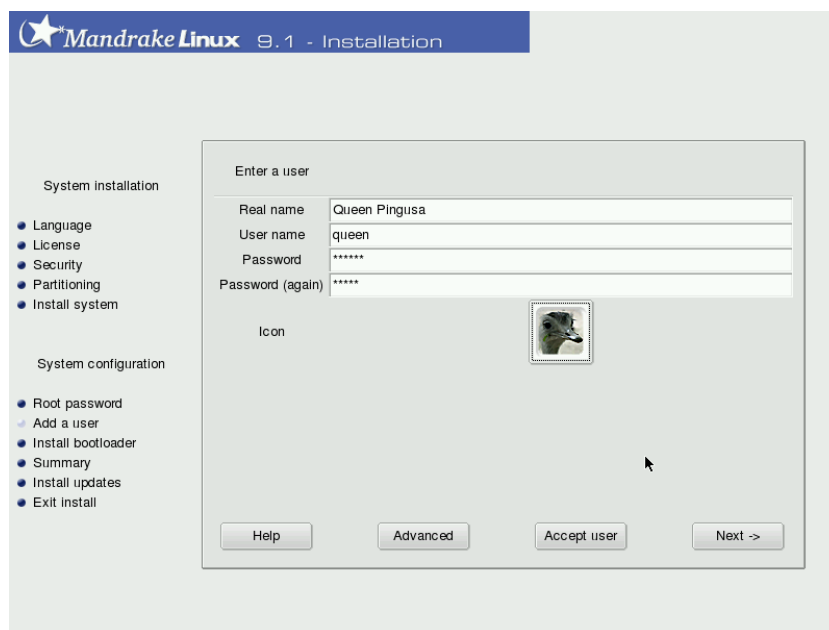
If you wish access to this computer to be controlled by an authentication server, click the Advanced button.

If your network uses either LDAP, NIS, or PDC Windows Domain authentication services, select the appropriate one for authentication. If you do not know which one to use, you should ask your network administrator.



If you happen to have problems with remembering passwords, if your computer will never be connected to the internet or that you absolutely trust everybody who uses your computer, you can choose to have No password.

3.13. Adding a User



GNU/Linux is a multi-user system, meaning each user may have their own preferences, their own files and so on. You can read the *Starter Guide* to learn more about multi-user systems. But unlike root, who is the system administrator, the users you add at this point will not be authorized to change anything except their own files and their own configurations, protecting the system from unintentional or malicious changes that impact on the system as a whole. You will have to create at least one regular user for yourself — this is the account which you should use for routine, day-to-day use. Although it is very easy to log in as root to do anything and everything, it may also be very dangerous! A very simple mistake could mean that your system will not work any more. If you make a serious mistake as a regular user, the worst that will happen is that you will lose some information, but not affect the entire system.

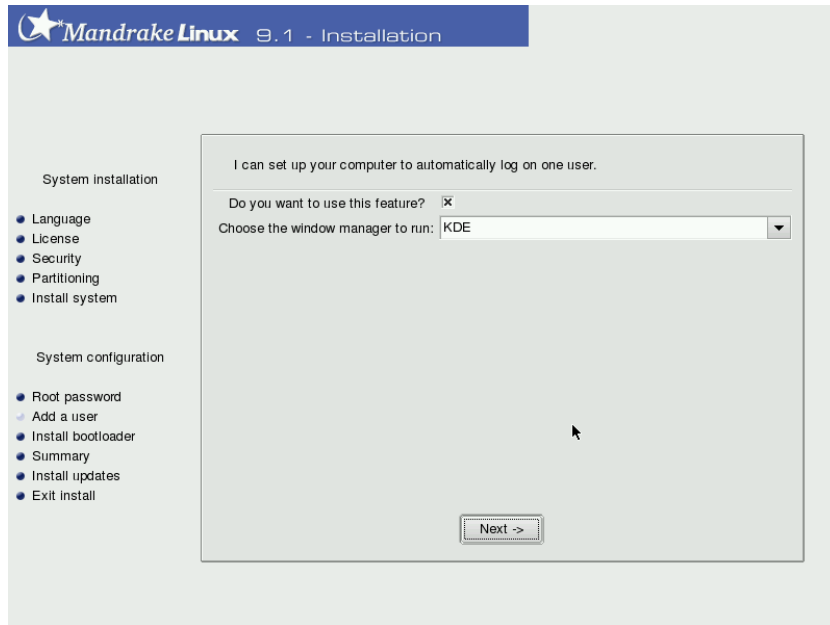
The first field asks you for a real name. Of course, this is not mandatory — you can actually enter whatever you like. *DrakX* will use the first word you typed in this field and copy it to the User name field, which is the name this user will enter to log onto the system. If you like, you may override the default and change the username. The next step is to enter a password. From a security point of view, a non-privileged (regular) user

password is not as crucial as the root password, but that is no reason to neglect it by making it blank or too simple: after all, **your** files could be the ones at risk.

Once you click on Accept user, you can add other users. Add a user for each one of your friends: your father or your sister, for example. Click Next -> when you have finished adding users.

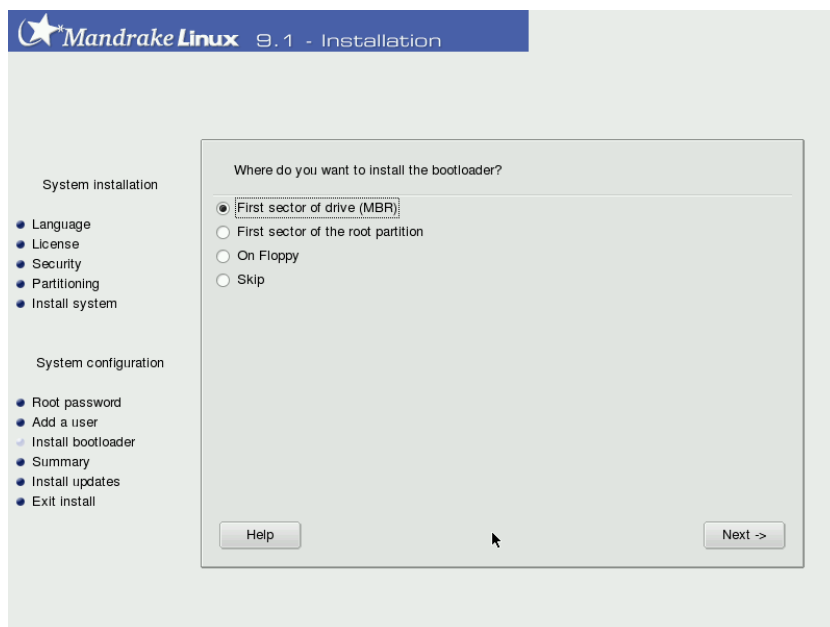


Clicking the Advanced button allows you to change the default shell for that user (*bash* by default).



When you have finished adding users, you will be asked to choose a user that can automatically log into the system when the computer boots up. If you are interested in that feature (and do not care much about local security), choose the desired user and window manager, then click Next ->. If you are not interested in this feature, uncheck the Do you want to use this feature? box.

3.14. Installing a Bootloader



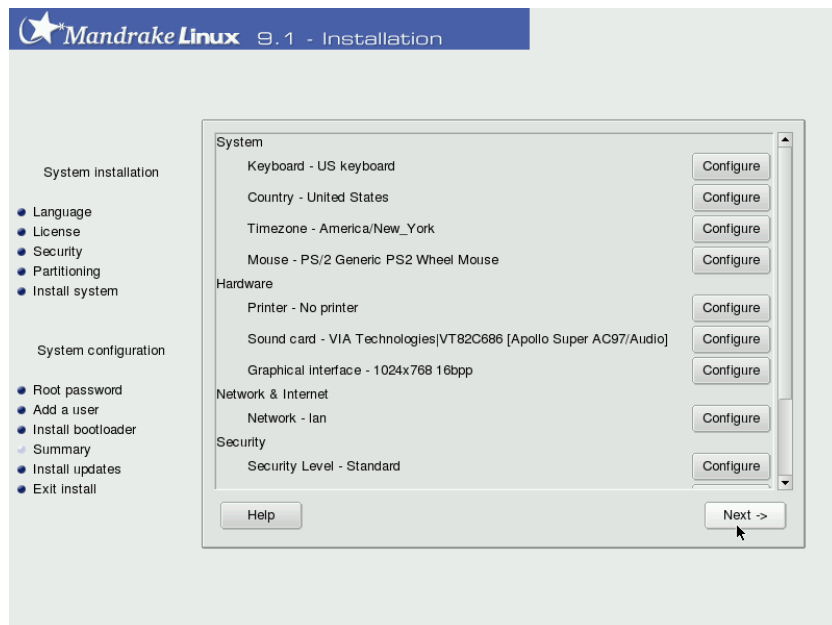
LILO and *grub* are *GNU/Linux* bootloaders. Normally, this stage is totally automated. *DrakX* will analyze the disk boot sector and act according to what it finds there:

- if a *Windows* boot sector is found, it will replace it with a *grub* / *LILO* boot sector. This way you will be able to load either *GNU/Linux* or another OS.
- if a *grub* or *LILO* boot sector is found, it will replace it with a new one.

If it cannot make a determination, *DrakX* will ask you where to place the bootloader.

3.15. Check Miscellaneous Parameters

3.15.1. Summary

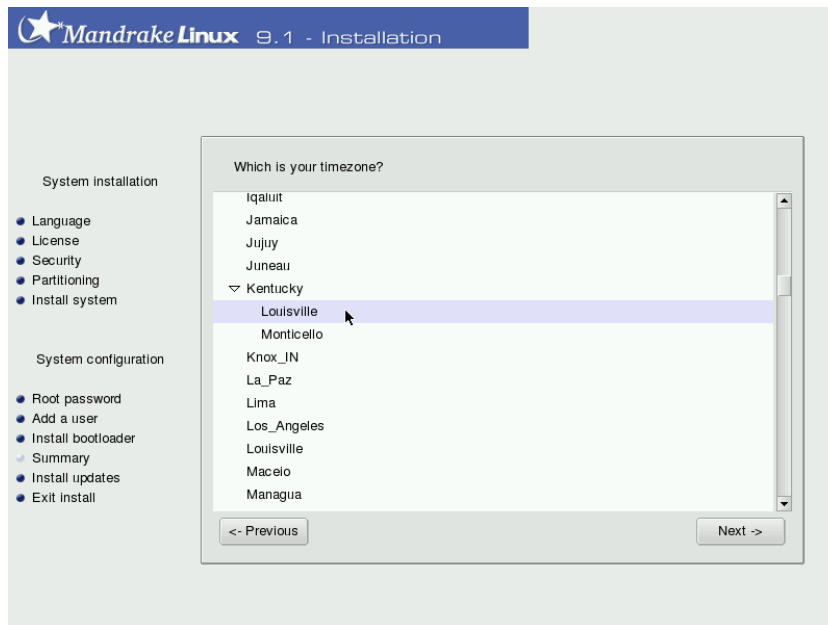


As a review, *DrakX* will present a summary of information it has about your system. Depending on your installed hardware, you may have some or all of the following entries. Each entry is made up of the configuration item to be configured, followed by a quick summary of the current configuration. Click on the corresponding Configure button to change that.

- Keyboard: check the current keyboard map configuration and change that if necessary.
- Country: check the current country selection. If you are not in this country, click on the Configure button and choose another one. If your country is not in the first list shown, click the More button to get the complete country list.
- Timezone: By default, *DrakX* deduces your time zone based on the country you have chosen. You can click on the Configure button here if this is not correct.
- Mouse: check the current mouse configuration and click on the button to change it if necessary.
- Printer: clicking on the Configure button will open the printer configuration wizard. Consult the corresponding chapter of the *Starter Guide* for more information on how to setup a new printer. The interface presented there is similar to the one used during installation.
- Sound card: if a sound card is detected on your system, it is displayed here. If you notice the sound card displayed is not the one that is actually present on your system, you can click on the button and choose another driver.
- Graphical Interface: by default, *DrakX* configures your graphical interface in 800x600 or 1024x768 resolution. If that does not suit you, click on Configure to reconfigure your graphical interface.
- TV card: if a TV card is detected on your system, it is displayed here. If you have a TV card and it is not detected, click on Configure to try to configure it manually.
- ISDN card: if an ISDN card is detected on your system, it will be displayed here. You can click on Configure to change the parameters associated with the card.
- Network: If you want to configure your Internet or local network access now.

- **Security Level:** this entry allows you to redefine the security level as set in a previous step (*Security Level*, page 12).
- **Firewall:** if you plan to connect your machine to the Internet, it's a good idea to protect yourself from intrusions by setting up a firewall. Consult the corresponding section of the *Starter Guide* for details about firewall settings.
- **Bootloader:** if you wish to change your bootloader configuration, click that button. This should be reserved to advanced users.
- **Services:** here you'll be able to fine control which services will be run on your machine. If you plan to use this machine as a server it's a good idea to review this setup.

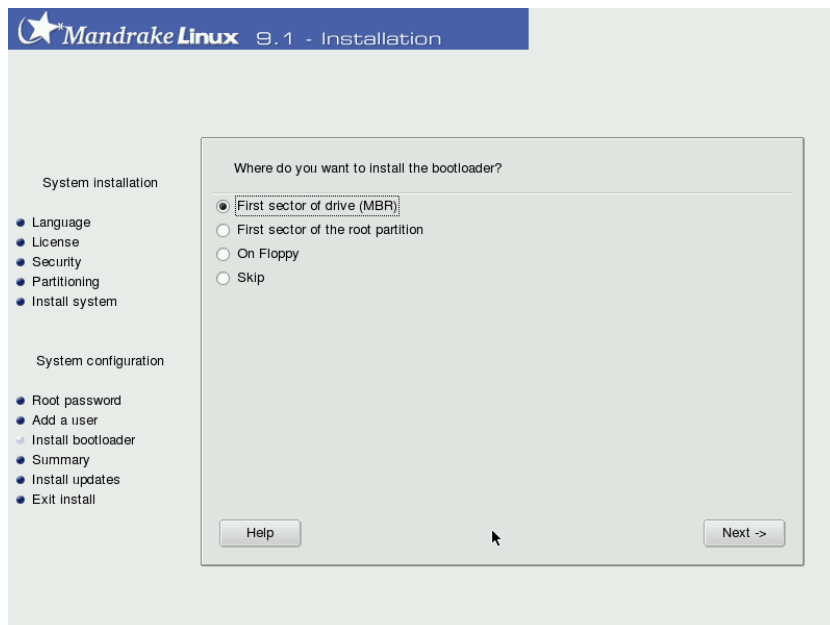
3.15.2. Time Zone Options



GNU/Linux manages time in GMT (Greenwich Mean Time) and translates it to local time according to the time zone you selected. If the clock on your motherboard is set to local time, you may deactivate this by unselecting *Hardware clock set to GMT*, which will let *GNU/Linux* know that the system clock and the hardware clock are in the same timezone. This is useful when the machine also hosts another operating system like *Windows*.

The *Automatic time synchronization* option will automatically regulate the clock by connecting to a remote time server on the Internet. For this feature to work, you must have a working Internet connection. It is best to choose a time server located near you. This option actually installs a time server that can be used by other machines on your local network as well.

3.15.3. Installing a Bootloader



This dialog allows you to fine tune your bootloader:

- Bootloader to use: there are three choices for your bootloader:
 1. GRUB: if you prefer *grub* (text menu).
 2. LILO with text menu: if you prefer *LILO* with its text menu interface.
 3. LILO with graphical menu: if you prefer *LILO* with its graphical interface.
- Boot device: in most cases, you will not change the default (`/dev/hda`), but if you prefer, the bootloader can be installed on the second hard drive (`/dev/hdb`), or even on a floppy disk (`/dev/fd0`);
- Delay before booting the default image: after a boot or a reboot of the computer, this is the delay given to the user at the console to select a boot entry other than the default.



Beware that if you choose not to install a bootloader (by selecting Skip), you must ensure that you have a way to boot your **Mandrake Linux** system! Be sure you know what you are doing before changing any of the options.



Clicking the Advanced button in this dialog will offer advanced options which are normally reserved for the expert user.

3.15.4. Setup of The Bootloader Entries

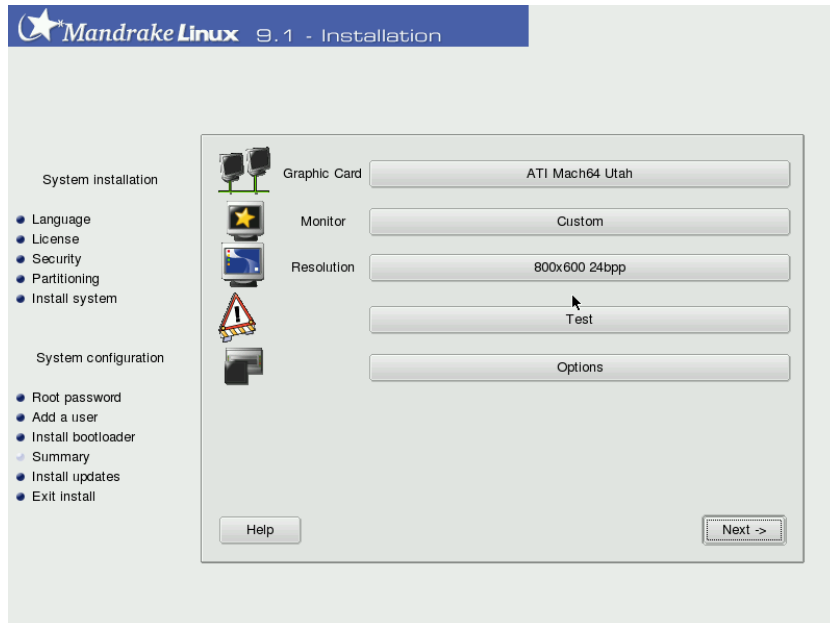
After you have configured the general bootloader parameters, the list of boot options that will be available at boot time will be displayed.

If there are other operating systems installed on your machine they will automatically be added to the boot menu. You can fine-tune the existing options by clicking Add to create a new entry; selecting an entry and clicking Modify or Remove to modify or remove it. OK validates your changes.



You may also **not** want to give access to these other operating systems to anyone who goes to the console and reboots the machine. You can delete the corresponding entries for the operating systems to remove them from the bootloader menu, but you will need a boot disk in order to boot those other operating systems!

3.15.5. Configuring X, the Graphical Server



X (for X Window System) is the heart of the *GNU/Linux* graphical interface on which all the graphical environments (*KDE*, *GNOME*, *AfterStep*, *WindowMaker*, etc.) bundled with **Mandrake Linux** rely upon.

You will be presented with a list of different parameters to change to get an optimal graphical display:

Graphic Card

The installer will normally automatically detect and configure the graphic card installed on your machine. If it is not the case, you can choose from this list the card you actually have installed.

In the case that different servers are available for your card, with or without 3D acceleration, you are then asked to choose the server that best suits your needs.

Monitor

The installer will normally automatically detect and configure the monitor connected to your machine. If it is correct, you can choose from this list the monitor you actually have connected to your computer.

Resolution

Here you can choose the resolutions and color depths available for your hardware. Choose the one that best suits your needs (you will be able to change that after installation though). A sample of the chosen configuration is shown in the monitor.

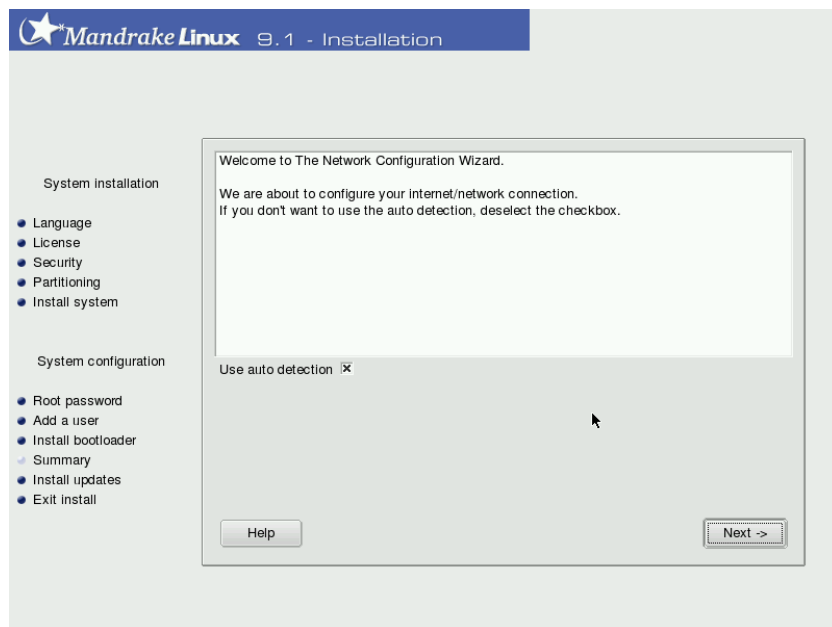
Test

the system will try to open a graphical screen at the desired resolution. If you can see the message during the test and answer Yes, then *DrakX* will proceed to the next step. If you cannot see the message, it means that some part of the autodetected configuration was incorrect and the test will automatically end after 12 seconds, bringing you back to the menu. Change settings until you get a correct graphical display.

Options

Here you can choose whether you want to have your machine automatically switch to a graphical interface at boot. Obviously, you want to check No if your machine is to act as a server, or if you were not successful in getting the display configured.

3.15.6. Configure your Network



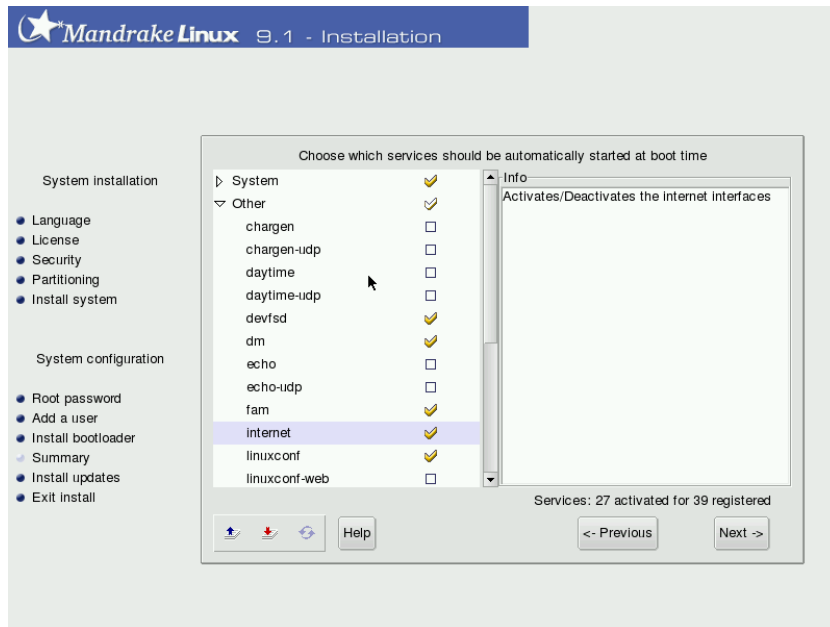
You will now set up your Internet/network connection. If you wish to connect your computer to the Internet or to a local network, click Next ->. **Mandrake Linux** will attempt to autodetect network devices and modems. If this detection fails, uncheck the Use auto detection box. You may also choose not to configure the network, or to do it later, in which case clicking the Cancel button will take you to the next step.

When configuring your network, the available connections options are: traditional modem, ISDN modem, ADSL connection, cable modem, and finally a simple LAN connection (Ethernet).

We will not detail each configuration option – just make sure that you have all the parameters, such as IP address, default gateway, DNS servers, etc. from your Internet Service Provider or system administrator.

You can consult the *Starter Guide* chapter about Internet connections for details about the configuration, or simply wait until your system is installed and use the program described there to configure your connection.

3.15.7. Selecting Available Services at Boot Time



This dialog is used to choose which services you wish to start at boot time.

DrakX will list all the services available on the current installation. Review each one carefully and uncheck those which are not needed at boot time.

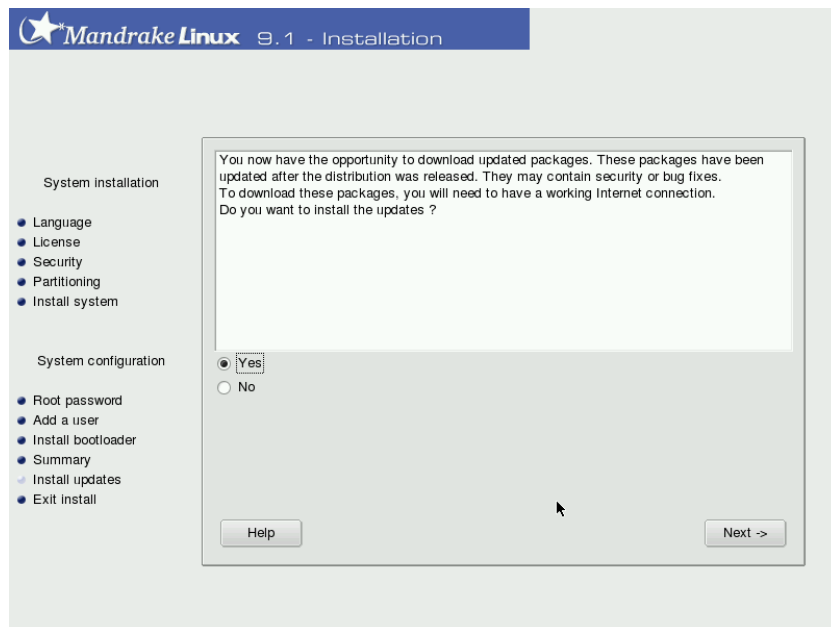


A short explanatory text will be displayed about a service when it is selected. However, if you are not sure whether a service is useful or not, it is safer to leave the default behavior.



At this stage, be very careful if you intend to use your machine as a server: you will probably not want to start any services that you do not need. Please remember that several services can be dangerous if they are enabled on a server. In general, select only the services you **really** need.

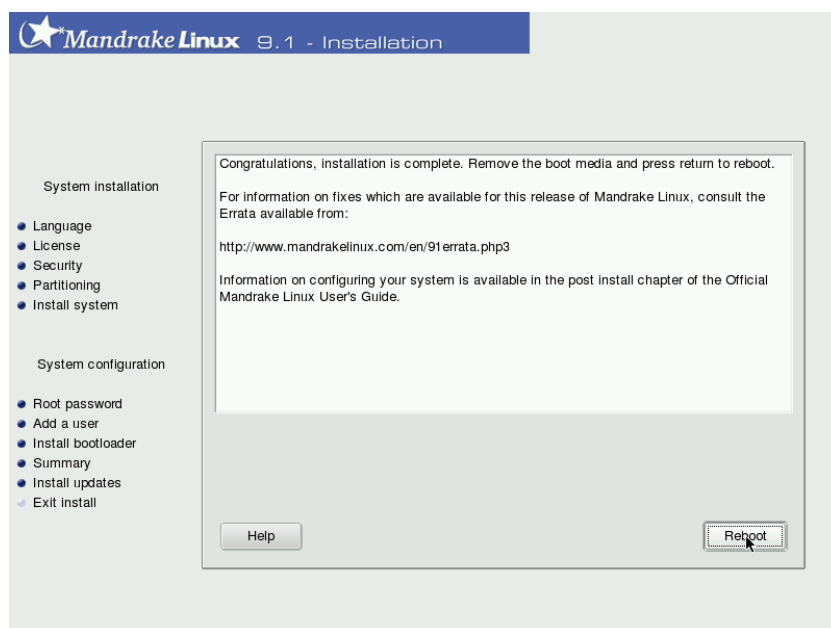
3.16. Installing Updates from the Internet



At the time you are installing **Mandrake Linux**, it is likely that some packages have been updated since the initial release. Bugs may have been fixed, security issues resolved. To allow you to benefit from these updates, you are now able to download them from the Internet. Check Yes if you have a working Internet connection, or No if you prefer to install updated packages later.

Choosing Yes will display a list of places from which updates can be retrieved. You should choose one nearer to you. A package-selection tree will appear: review the selection, and press Install to retrieve and install the selected package(s), or Cancel to abort.

3.17. It's Finished!



There you are. Installation is now complete and your *GNU/Linux* system is ready to use. Just click Reboot to reboot the system. The first thing you should see after your computer has finished doing its hardware tests is the bootloader menu, giving you the choice of which operating system to start.



The Advanced button shows two more buttons to:

1. generate auto-install floppy: to create an installation floppy disk that will automatically perform a whole installation without the help of an operator, similar to the installation you just configured.

Note that two different options are available after clicking the button:

- Replay. This is a partially automated installation. The partitioning step is the only interactive procedure.
- Automated. Fully automated installation: **the hard disk is completely rewritten, all data is lost.**

This feature is very handy when installing a number of similar machines. See the Auto install (http://www.mandrakelinux.com/drakx/auto_inst.html) section on our web site for more information.

2. Save packages selection¹: saves a list of the packages selected in this installation. To use this selection with another installation, insert the floppy and start the installation. At the prompt, press the **F1** key and type `linux defcfg="floppy"` .

3.18. How to Uninstall Linux

Operating systems generally do not offer the possibility to uninstall themselves. **Mandrake Linux** is proud to offer you the liberty to do so.

The uninstallation process consists of two steps:

1. Delete all partitions on your hard drive and replace them by a single FAT partition with *DiskDrake* .
2. Uninstall the bootloader (generally *grub*) from the Master Boot Record (MBR). To do so, boot under *DOS* and run the `fdisk /mbr` command.

If you have another OS, please consult its documentation to determine how to perform the same step.

Goodbye, and thank you for using **Mandrake Linux**!

