Make the Switch: Novell's Guide to a Linux Desktop

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Make the Switch:
Novell's Guide to a Linux Desktop

Proprietary Statement

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Contents

General Information

Fonts

The following table shows the typographic conventions used in this training manual and their meanings.

Font	Meaning	Example
`Example`	File names, paths	In the directory `/home/` ... the file `/etc/fstab` ... the command `ls` ...
	Variables	... content of `DISPLAY` ...
	Buttons, text fields, radio buttons, etc.	After clicking `OK` ... In the field `User`, enter ...
	Program output and input	`tux@earth:~ >` ... enter `yes` ...
	URLs	`http://www.suse.com`
	Daemons	`named` makes sure that ...
Example	Highlighting	... may *not* ...
	User, host, and domain names	... to the user *tux* ... ... to the host *earth* ... ... via *sun.example.com* ... ... hosts in the network *example.com*...
`Example`	Placeholder	`ping` *`hostname`*
`[Example]`	Optional parameters	`ls [-la]`
`[`*`Example`*`]`	Optional placeholders	`su - [`*`login`*`]`
(`Example`)	Keyboard key	... pressing (`Ctrl`) (`X`) ...

Symbols

The symbols used in the manual are explained in the following table:

Symbol	Meaning
	Exercise
	Note
	Optional supplement
	Warning

1 Introduction

This kit provides a step-by-step introduction to the SUSE LINUX 9.1 Personal edition which comes, out of the box, with a rich set of applications. After you complete this kit, you can decide for yourself if Linux is a valid alternative for you. If you decide to implement Linux, this kit provides the information you need to make the switch to Linux.

This study kit is for students who are familiar with Windows desktop systems. If you are coming from a different Linux distribution and want to have a closer look at the SUSE LINUX 9.1 Personal edition, you can simply skip the information you are already familiar with and look at how SUSE Linux differs from your current desktop solution.

If you are uncomfortable with Linux, this kit allows you to try Linux without installing it on your computer. You don't even need to install Linux on your PC to complete the hands-on exercises. Instead, you can download the SUSE LINUX 9.1 Personal Live-CD and boot a complete Linux desktop system from CD. (However, you cannot experience the real speed and convenience of an installed SUSE LINUX 9.1 Personal system.

Objectives

After you complete this chapter, you should be able to do the following:

- Describe how to use this kit to learn about using SUSE LINUX 9.1 Personal edition on your desktop computer.
- Select the best option for downloading or ordering the software needed to complete this kit successfully.

1.1 Purpose of This Kit

This kit assumes that the student is familiar with one or more Microsoft Windows desktop systems. Students should know how to navigate a Microsoft Windows desktop and how to work productively with the Microsoft Office package and with other common applications on the Windows platform.

You should be working on an existing network where base services such as DHCP, DNS, and file and print services are up and running. If you are using a standalone computer, the appendix provides a simplified network and printer setup.

If you use specialized applications on your Microsoft desktop, refer to the appendix which has a list of Linux-based alternative programs. This list is not all-inclusive. For special needs, you can search the Internet–you should be able to alternatives ranging from free open software to commercial products for the Linux platform.

In just one day, you can learn about the benefits of using Linux as a desktop system. You will even be able to see how your own Microsoft files work in the Linux desktop environment.

1.2 Download Zone

The kit is based on SUSE LINUX 9.1 Personal edition. For your convenience, we made several options available for you to get the software you need to follow this study kit and the hand-on exercises.

On the Web site where you downloaded this study kit, you find all further links and information you need to get the software you want.

The main download site is `http://www.novell.com/training/linux`

Here is a summary of your options:

- You checked out the content of this PDF download file and have decided to purchase the full self-study kit from Novell. Just follow the link on the main download site to purchase a full kit with a high-quality printed manual, both CDs of the SUSE LINUX 9.1 Personal edition, and free SUSE Installation support for your system.
- You enjoyed studying this kit and you think the quality of the PDF you downloaded is acceptable. However, you would really like to have free installation support to ensure your

SUSE LINUX 9.1 Personal edition works correctly on your hardware. In this case, you can simply purchase a full version of the SUSE LINUX 9.1 Personal edition from a bookstore, amazon.com, and other distributers as well as directly from links on the main download page. With the full product, you have printed product documentation, the CD set, and free installation support.

- You liked this PDF and you want the Installation CD to perform a full installation of SUSE LINUX 9.1 Personal edition on your computer, but you are not ready to invest the amount of money required to purchase a full self-study kit or the product itself. In this case, just follow the link on the main download page to download an ISO image for the SUSE LINUX 9.1 Personal Installation CD.
- You just want to give SUSE LINUX 9.1 try, you don't want to modify any of your computers or even install SUSE LINUX. You can download the SUSE LINUX 9.1 Personal Live-CD from the main download site for this kit. With the Live-CD, you boot a complete Linux desktop system from CD and follow all the exercises. However, you cannot experience the real speed and convenience of an installed SUSE LINUX 9.1 Personal system.

This PDF file can be distributed freely. If you downloaded this kit, you gave us your e-mail address and other information that will allow us to update you on the future development of SUSE LINUX software and Novell Training Services offerings. To receive this information, each user must download the PDF file individually and provide his or her email address and additional information. Regardless of how you got this PDF, you still need the software to complete the exercises.

Summary

- With this kit and the SUSE LINUX 9.1 Personal edition, you can decide if the Linux desktop system is a good alternative for you right now or if you want to wait for further developments in the Linux desktop area.
- With the download options and links that are available to purchase or simply download suitable software, you have everything you need to complete this study kit.

2 Describe the Unique Characteristics of Linux

Objectives

After you complete this chapter, you should be able to do the following:

- Briefly describe the history of Linux and the differences between Linux and other operating systems.
- Describe the various SUSE Linux distributions and understand the different offerings from SUSE.
- Describe the main differences between a Linux system and a Microsoft Windows system.

2.1 What Linux Is

2.1.1 A Brief History of Linux

In the 1980s and early 1990s, a clear division existed between expensive departmental computers, normally running a UNIX operating system with commercial applications, and inexpensive personal computers (PCs). To combine the advantages of UNIX computers (stability and high performance) with the PC (low-cost hardware), developers began trying to develop a system similar to the UNIX operating system that would run on PC hardware. (The Intel 80386 processor became available during this time period.)

In 1991, Linus Torvalds, a Finnish student, created a PC operating system similar to UNIX. He named it Linux and published it on the Internet. From the beginning, Linux has been freely available, a decisive factor in its success. As a result, interested programmers worldwide can contribute to its further development.

Because of the way it was published and licensed, no one can buy the ownership rights of Linux. Likewise, no one can charge licensing fees for the use of this operating system (they can charge licensing fees for commercial applications that are run on Linux).

2.1.2 Linux Distributions

What Is a Distribution?

The Linux operating system consists of the actual core or kernel and a large number of additional user programs. These programs are needed for secure and convenient operation. Various application programs are usually installed on a computer. To use other operating systems, you usually have to purchase application programs. The majority of application programs for Linux, however, are either freely available or can be used free of charge. Linux can therefore be considered a package, an operating system with many application programs that are available free of license fees. Although you can obtain all of these Linux-based programs via the Internet, doing so involves downloading huge amounts of data. It makes sense, then, to store the Linux operating system, together with all the free user programs, on CD or DVD. Such a collection, or distribution, offered by various commercial companies, usually includes (in varying size and quality) printed installation instructions and installation programs, some of which are very sophisticated. While the price of these distributions is justified by the costs of producing a CD and providing the installation aids to make Linux available to most users, it does not include licensing fees. You do not need a license for Linux when

you purchase a distribution, and after you have purchased the distribution, you can install it on any number of computers. The question of pirated copies also does not arise.

You should be familiar with the following terms:

- The Linux kernel is the system core. It provides the technology to interact with the computer hardware and to allow higher applications to make use of the computer hardware.
- A Linux Operating System is a combination of the Linux kernel and installation and configuration programs simplify using Linux technology to operate a computer.
- A Linux Distribution is a combination of a kernel, the components needed to make up the operating system, and enough applications to create a full working environment. Not only do distributions come from different vendors such as SUSE LINUX, but most vendors also make different distributions available for special purposes. A Linux distribution can have 1,000 to 5,000 bundled applications.
- The term Linux Server is not clearly defined, but most vendors use the Linux server as a stable, reliable platform on which a company can run mission-critical services or applications in a corporate network. In this scenario, having the latest technologies is not as important as having the most reliable ones bundled with each server version. The SUSE Server version, for example, has a much longer product roll-over period than desktop distributions, and is built only with reliable components. In addition, support services can be granted to SUSE servers running any application on top as long as the kernel has not been modified.
- A Linux Desktop system should serve the defined needs of a desktop computer user. This kit is built on the SUSE LINUX 9.1 Personal edition, a User Desktop system with a more limited number of easy-to-use applications that take advantage of the full processing power of a computer. This edition comes with a full version of OpenOffice, the free Office application, and basic communication applications.

SUSE LINUX Distributions

SUSE LINUX 9.1 Personal

To date, SUSE LINUX 9.1 Personal is the most straightforward, user-friendly, and convincing alternative to the market-dominating system. Two CDs give even technically inexperienced PC users access to the full range of advantages of the Open Source world.

For the first time, the SUSE LINUX 9.1 Personal edition contains a live CD which you can use to boot Linux without actually installing it and modifying your system. Simply insert the CD, power on the machine, and test SUSE LINUX 9.1 Personal. However, remember that the speed of the live edition does not compare to the speed of a Linux system installed on the hard disk.

The entire SUSE LINUX 9.1 Personal distribution can be installed from a single CD, but it comes with a full version of OpenOffice and many tools to help you get up to speed in your environment within a few minutes.

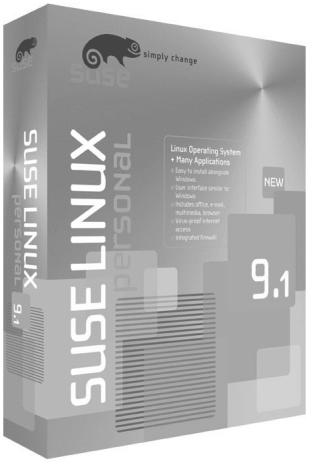


Figure 2.1: SUSE LINUX 9.1 Personal

SUSE LINUX 9.1 Professional

SUSE LINUX 9.1 Professional is the Linux operating system for ambitious home users, technically skilled computer enthusiasts, and developers. It provides even more applications for easy and productive use of the PC, including office, Internet, and multimedia software, server services for home networks, and development tools.

Figure 2.2: SUSE LINUX 9.1 Professional

SUSE LINUX Enterprise Server 8

SUSE LINUX Enterprise Server 8 is a leading server operating system for professional deployment in heterogeneous IT environments of all sizes and sectors. It is available for all relevant hardware platforms, ranging from AMD/Intel 32-bit and 64-bit processors to the entire IBM eServer series, including mainframes. SUSE LINUX Enterprise Server 8 provides a single server operating system with a uniform code basis for all of these different systems.

The Novell SUSE LINUX Enterprise Server 9 may be shipping by the time you receive this kit. SUSE Enterprise Server 9 (SLES9) will include the new Linux kernel, providing advanced speed and reliability, and many new, advanced features.

Figure 2.3: SUSE LINUX Enterprise Server 8

SUSE LINUX Standard Server 8

With its comprehensive graphical administration, SUSE LINUX Standard Server was designed for small organizations and departments that want to implement their Internet access as well as e-mail, print, and file services in a reliable, secure way. Standard Server is available for 32-bit processors (x86) from AMD and Intel, and it supports up to two CPUs.

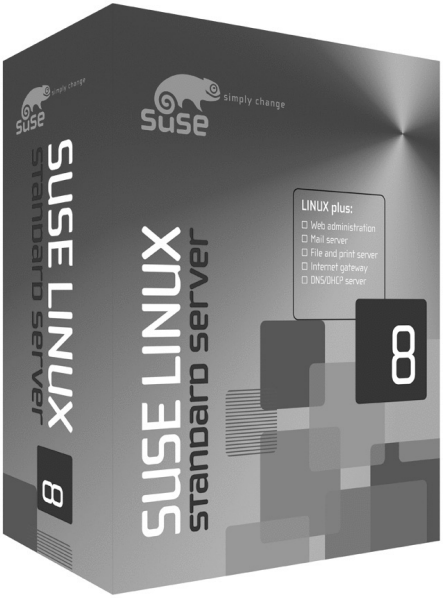


Figure 2.4: SUSE LINUX Standard Server 8

SUSE LINUX Openexchange Server 4.1

SUSE LINUX Openexchange Server 4.1 is a groupware and communication solution that helps your company to progress. Openexchange Server provides superior technical features, far-reaching hardware independence, smooth migration, and a wide range of supported clients, including Outlook clients from Outlook 98, and various web browsers.

Figure 2.5: SUSE LINUX Openexchange Server 4.1

SUSE LINUX Desktop 1

SUSE LINUX Desktop 1 is a complete, user-friendly solution for desktop operating systems. It provides support for Microsoft Office and IBM Lotus Notes. SUSE LINUX Desktop provides a flexible platform that accommodates the needs of the typical office worker.

Novell technologies such as ZENworks have made using Microsoft Windows desktops managable in enterprise-scale networks. By the end of 2004, Novell will provide the same reliable, enterprise-proven framework for Linux-based desktop systems.

Figure 2.6: SUSE LINUX Desktop 1

2.2 Major Differences Between Windows and Linux

Linux and Windows are different. So many differences exist that we cannot describe all of them here. However, we can discuss some of the major differences.

2.2.1 Linux Is Case Sensitive

Linux differentiates between lower-case and upper-case characters for filenames. The files `hello.txt`, `Hello.txt` and `HELLO.TXT` are totally different and can coexist in one directory.

2.2.2 Slash Instead of Backslash

When you enter a path in Windows, you divide the directories and the filename with a backslash "`\`" (for example: `C:\WINNT\explorer.exe`). In Linux, you have to use the slash "`/`" instead, just as you do in Internet addresses.

2.2.3 There Are No Drive Characters in Linux

In Windows, every storage device is named with a special character (for example, the floppy disk drive is named "`A:`" and the hard disk is named "`C:`"...).

In Linux, the storage devices do not have naming characters. You have only one file system tree that includes all devices. The devices are mounted in this tree and appear as a directory to the user. As administrator, you can choose where to mount the devices and what to name them (normally the floppy disk drive is listed under `/media/floppy/`).

This system allows you to use more than 26 storage devices at the same time. Additionally, the user does not need to know whether the file he is looking for is on the first, the second, or the third hard disk.

2.2.4 There Are No EXE Files

In Windows you can identify an executable file by the extension `.exe`. In Linux executable files do not have this extension (many files do not have any extension). You can identify executable files in Linux by their permissions. If the "execute" permission is set, you are allowed to execute the file.

2.2.5 The Graphical User Interface Is Not a Part of the Operating System

You cannot install Windows without its graphical user interface. In Linux, the graphical user interface is a normal application that you can choose whether or not to install. Because the most important server services in Linux can be configured by editing an ASCII text file, you do not need a graphical front end if you want your computer to act only as a server.

Not installing a graphical user interface has some advantages:

Stability Every program includes errors that can make your system unstable. The fewer number of programs you use, the more stable your system will be. A graphical user front end is a large program and it may contain a lot of undiscovered programming errors, even if the error ratio is low.

Performance Every running program needs system resources. Fewer programs running on your computer means increased performance.

Variety A lot of different graphical user interfaces are available for Linux. You can use more than one and you can choose which one you like most.

2.2.6 The Administrator Is Called *root*

A Linux system has only one administrator account. The administrator, which is called *root*, can delegate tasks to users, but a user cannot be identical to `root`.

Microsoft Systems also has an administrator account. The account has all privileges and is not used by normal users by default.

2.2.7 More Than One Company Is Developing Linux

Linux is being developed by multiple companies. In additions, many companies and individuals are developing products for Linux.

2.2.8 Linux Comes Bundled with Many Applications

Thousands of applications are available for Linux. Many of them are already bundled in the distribution. The SUSE LINUX 9.1 Personal distribution includes the operating system, which is installed along with the other applications that come bundled with it on the CD. These applications can include the whole OpenOffice suite, collaboration programs, and tools for burning CDs. With Microsoft Windows, you must purchase and install most applications separately.

Summary

- Linux is a license-free, ongoing project with contributions from many sources rather than a single vendor system sold for a license fee.
- Linux desktop distributions provide a real alternative to proprietary systems such as those from Microsoft. Linux is already well accepted in the server arena for special-purpose servers.
- The main differences between Microsoft Windows systems and Linux can be easily understood.

3 Installation

Objectives

After you complete this chapter, you should be able to do the following:

- Describe the components of the SUSE LINUX 9.1 Personal distribution and choose the best option for studying this kit.
- Understand the whole installation process of SUSE LINUX 9.1 Personal and successfully install the distribution on your test hardware.
- Install SUSE LINUX 9.1 Personal to establish your learning environment.

3.1 SUSE LINUX 9.1 Personal Components

The SUSE LINUX 9.1 Personal distribution includes two CDs:

CD 1 SUSE LINUX 9.1 Personal Live CD

CD 2 SUSE LINUX 9.1 Personal Installation CD

The distribution also includes an installation guide which describes the installation and the main applications and lists a unique code allowing you to register with SUSE Support for free Installation Support of SUSE LINUX 9.1 Personal on your computer.

Information on how to obtain the SUSE LINUX 9.1 Personal components needed to use this kit is given in Chapter 1.2 on page 4.

3.2 Working from the LiveCD

If you just want to test SUSE LINUX, you should use the LiveCD. No software will be installed on your computer and no existing files will be touched. The price for this comfort is a loss of speed.

After inserting the CD, start your computer. When the boot menu appears, choose from these options:

`SUSE LINUX 9.1 LiveCD` Start the LiveCD with normal settings.

`LiveCD - Safe Settings` Start the LiveCD with safe settings. This is recommended for old computers or notebooks.

These two options are available in German, too.

If you do not want to start the English default version, you have eight seconds to choose the version you want to use. Use the arrow keys to select the version you want to start and press ⏎.

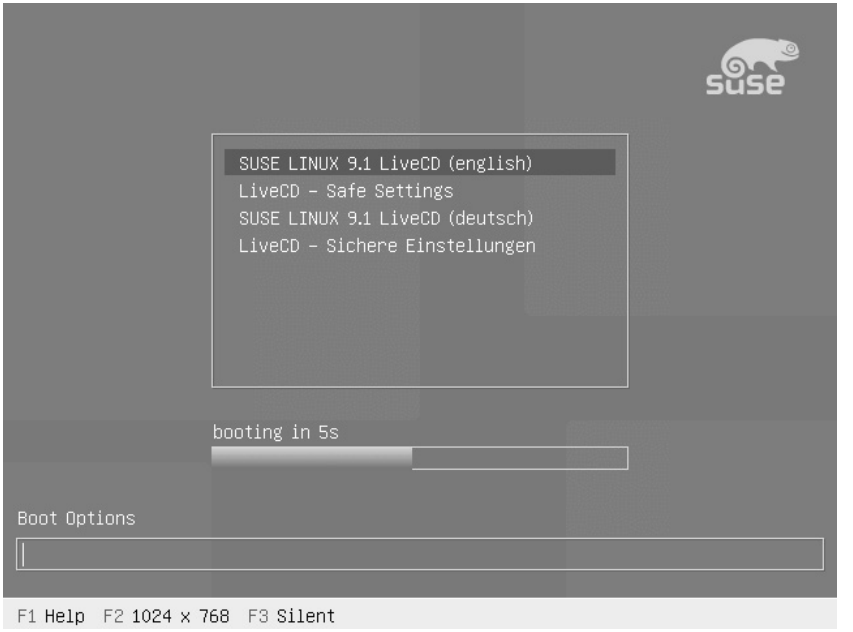


Figure 3.1: LiveCD Boot Menu

When the Live CD starts, you are logged in to regular SUSE LINUX 9.1 Personal running entirely from CD. The name of your user account is *linux*. This user account is different than the user account referred to in the exercises in this study kit.

If you decide to use the LiveCD to study this kit, be aware that the speed is much slower than the speed of an installed system.

Attention! You should not use a computer powered by SUSE LINUX LiveCD in a network or on the Internet because you can get administrator permissions on that system without any password.

3.3 How to Install SUSE LINUX 9.1 Personal

3.3.1 SUSE LINUX Installation Methods and Tools

The installation and configuration program for SUSE LINUX is called *YaST* (Yet another Setup Tool).

You have several options to choose from when installing SUSE LINUX:

Manual You can install SUSE LINUX from CD or DVD (the Personal distribution ships on CD only).

Network It is easy to configure an installation server in your network. You only need a boot medium (such as a floppy or CD); the packages are installed from the network.

Automatic SUSE developed a tool that allows SUSE LINUX to be installed and configured automatically. This tool is called *AutoYaST*.

3.3.2 The Start Screen

After you boot your computer from the installation CD, the welcome screen appears (see Fig. 3.2 on the next page). You can then choose which intallation option you want. The most important options are described below:

`Boot from Hard Disk` Boots the standard operating system installed on your hard disk.

`Installation` Starts the normal installation process.

`Installation - ACPI Disabled` Some old computers don't have ACPI power management. This can lead to problems during the installation. With this kind of installation, you can disable the ACPI features of SUSE LINUX.

`Installation - Safe Settings` Some older computers don't have any kind of power management or hard disk acceleration. If you have problems with your installation, you should try this.

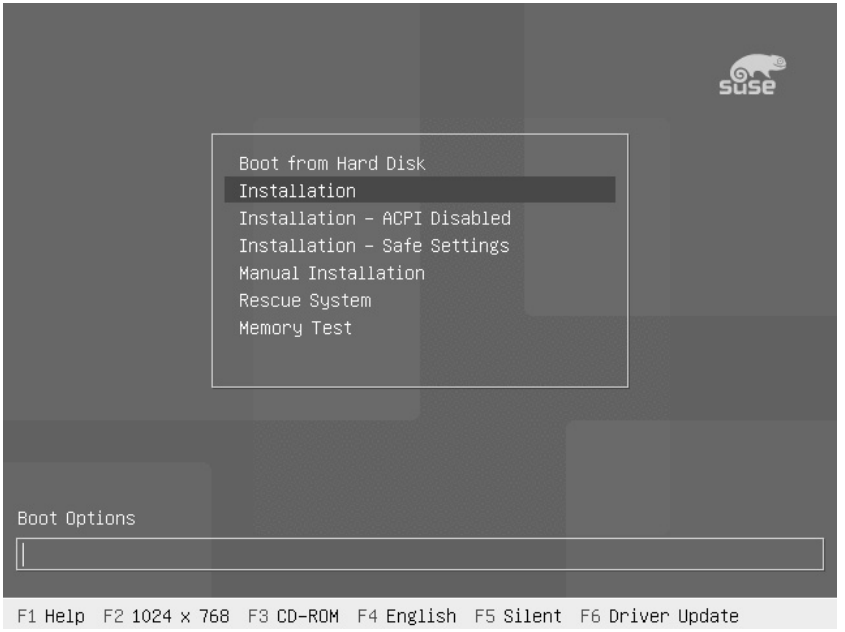


Figure 3.2: The Boot Menu

If you do not type any key within eight seconds, the system will boot from your hard disk and start your already installed OS. Use the arrow keys to select the option you want and press ↵.

When you select an options and press ↵, the installation program – called *YaST* – starts.

3.3.3 Base Installation

The first screen of YaST asks you for the language to be used during the installation process (see Fig. 3.3 on the following page).

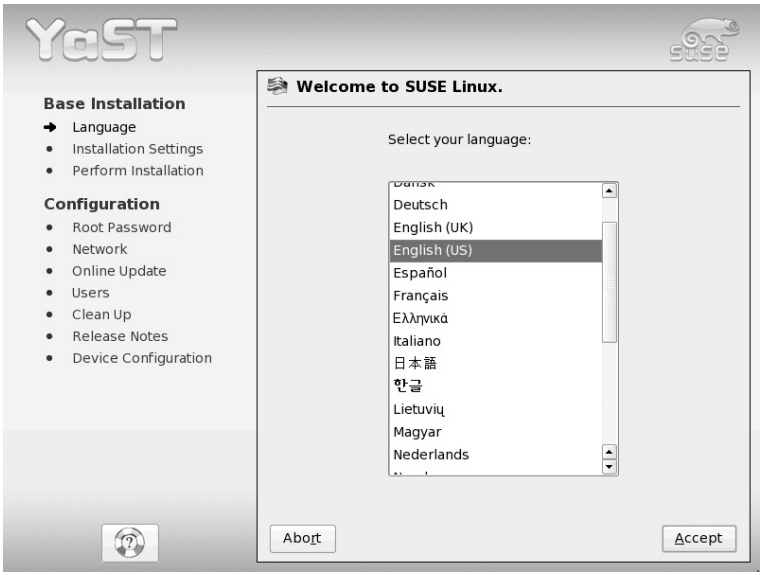


Figure 3.3: Language for the Installation Process

Click the `Accept` button to bring up the next menu (see Fig. 3.4 on the next page).

YaST shows you information about your hardware and makes suggestions for the installation. You can change these by clicking on the head font of each of the sections or by using the `Change...` menu.

The following sections are defined:

`System` Lists details about your hardware.

`Mode` Lists the available installation modes (SUSE LINUX 9.1 Personal offers the `New installation` mode only).

`Keyboard layout` Identifies the layout of your keyboard.

`Mouse` Identifies your mouse type.

Partitioning Create and change the partitioning table of your hard disk.

Software Select the software to be installed.

Booting Install and configure the GRUB boot loader.

Time zone Select your time zone.

Language Select the default language for your installation.

Default Runlevel Runlevels are different modes your system can work in. In Runlevel 5 the system allows normal users to log in, uses network services, and starts the graphical user interface.

Figure 3.4: Installation Settings

Normally you do not need to change the recommendations made by YaST. This is especially true if your test system has a blank hard drive. If you already have another operating system installed on the computer but your hard drive has free, unpartitioned space left, YaST automatically recommends

installing SUSE LINUX 9.1 Personal in that free space and creating a dual boot configuration for both operating systems.

After clicking `Accept`, you need to confirm your settings again. `Yes, install` starts the installation process. The installation can take some time, depending on your hardware.

3.3.4 Configuration

Root Password

If the installation was successful, the computer reboots. YaST starts up again because you need to configure some basic settings.

The first thing you need to do is to specify the password for the administrator *root*.

Figure 3.5: Specify the *root* Password

A warning appears if the selected password is too simple.

Network Configuration

After you have specified a password, you need review your network configuration. YaST displays a summary the network devices it has discovered:

- Network Interfaces
- DSL Connections
- ISDN Adapters
- Modems

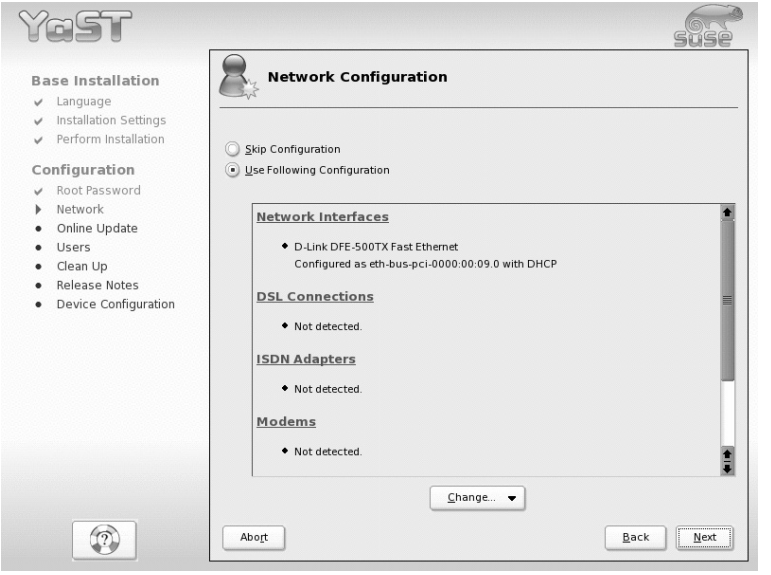


Figure 3.6: Network Configuration

By default YaST selects the DHCP configuration for the network interfaces. You can change the network configuration by clicking on the headline of the section or by using the `Change...` menu. If you want to change the network configuration, please read the appendix B on page 193 first.

In the next screen, you can test your internet connection. If you select `Yes, Test Connection to the Internet`, the latest release notes will be downloaded and YaST will check for new updates.

If new updates are found, YaST asks you to verify the download and installation. You should apply any updates to ensure your new system has the latest patches applied.

Users

After you have tested and updated your configuration, you can add users to the system. If you are using your Linux computer in a network with a NIS or LDAP authentication server, you can select `Network Client` in the next screen. Otherwise, you can select `Stand-Alone Machine` and add the users of your computer manually.

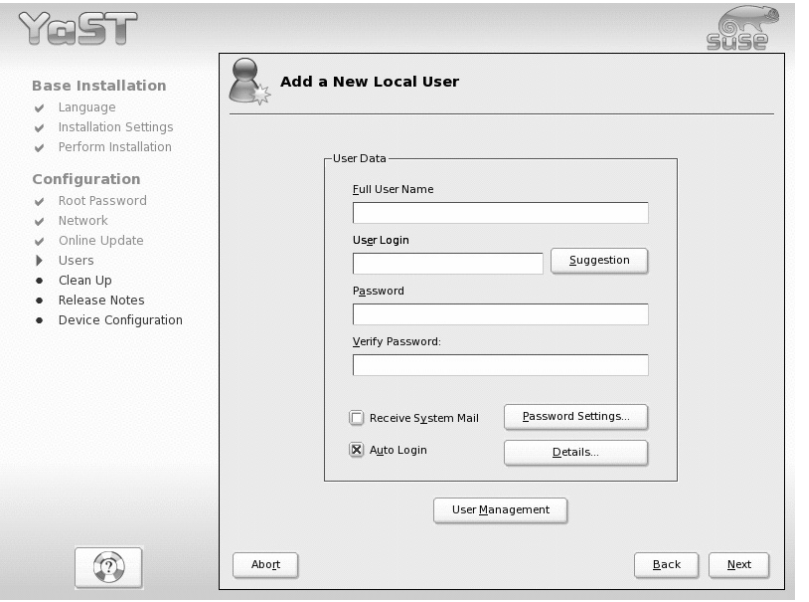


Figure 3.7: Selecting the User Authentication Method

To add an user, you need to provide the following information:

`Full User Name` The full name of the user.

`User Login` The login name of the user. This name must be unique on the system.

`Password` The case-sensitive login password for the user. You have to enter the password twice for verification.[1] YaST displays a warning if the password is insecure.

If you want the user to receive automatically generated mails for *root*, then you can activate the `Receive System Mail` option.

If you use your Linux computer only at your own desk and you want to avoid the login during the startup, you can activate the `Auto Login` option (selected by default).

The system information is now written to disk. YaST opens a window with the release notes.

Hardware Configuration

The last items you need to configure are additional hardware items such as

- Graphics Card
- Printer
- Soundcard
- TV cards

The graphics card and the soundcard are configured automatically by YaST. Most printers are also detected automatically. If you want to change the printer configuration, please read Appendix C on page 201. Click the `Next` button to confirm the settings and write them to the system.

[1] For security reasons, the letters of the password are shown as stars.

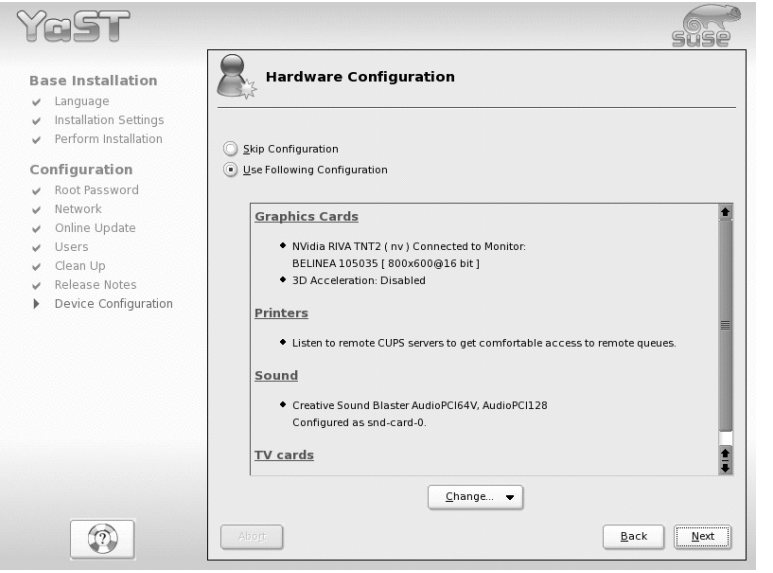


Figure 3.8: The Hardware Configuration

The last dialog tells you that the installation was successful. Press the `Finish` button. Linux is now ready for use.

You are ready to apply your knowledge about the SUSE LINUX installation to your test system. For this exercise you should have a test system with a blank hard drive or enough free, unpartitioned space to install SUSE LINUX.

Exercise: Install SUSE LINUX 9.1 Personal

1. Insert the SUSE LINUX 9.1 Personal Installation CD into your CD drive.
2. Reboot your computer.
3. Select `Installation` from the installation menu.

4. Select `English (US)` in the language menu and press `Accept`.
5. Accept the installation suggestions of YaST by pressing the `Accept` button.
6. Confirm the installation settings by clicking the `Yes, install` button.
7. Go for a coffee. :-)
8. To specify the `root` password, enter `secret` in the two text fields; then click the `Next` button. Confirm the warning message by pressing `Yes`.[2]
9. Confirm the suggestions of YaST's network configuration by clicking the `Next` button.
10. Select `Yes, Test Connection to the Internet` and click on the `Next` button to test your internet connection.
11. If the connection test was successful, click the `Next` button.
12. Do *not* install the updates found. Select `No, Skip Update` and press `OK`.[3]
13. Select `Stand-Alone Machine` as the user authentication method and press the `Next` button.
14. Add your first user. Insert the following data:

Textfield	Input
`Full User Name`	`Tux Pinguin`
`User Login`	`tux`
`Password`	`secret`
`Verify Password`	`secret`

15. Deactivate the `Auto Login` option, press the `Next` button, and confirm the insecure password by pressing `Yes`.
16. Confirm the release notes by clicking the `Next` button.
17. Confirm the hardware configuration dialog by clicking `Next`.
18. When the installation is completed, click the `Finish` button.

At this point you should have successfully installed your SUSE LINUX 9.1 Personal system on your test computer.

[2] You should use this insecure password only for the purpose of this training. Choose a more secure password on a live system.

[3] You should install the updates on production systems. You shouldn't install the updates during training because the updates may change menus and user interfaces.

Summary

- You are familiar with the components of the SUSE LINUX 9.1 Personal distribution.
- You are familiar with the different screens and installation options.
- You have successfully installed SUSE LINUX 9.1 Personal on your test system as a stand-alone desktop system using standard options and having access to the Internet and printers (if applicable).

4 Explore and Configure the KDE Desktop

Objectives

After you complete this chapter, you should be able to do the following:

- Understand how to safely boot and shut down your computer in the KDE desktop environment on a system running SUSE LINUX.
- Describe the KDE desktop environment and tools and use them to become familiar with the system.
- Explore your new SUSE LINUX system's default KDE desktop environment in a structured exercise.

4.1 How to Log In and Log Out of the KDE Desktop

4.1.1 Logging In

If computer users want to work with a multiuser-capable operating system, they must first identify themselves to the operating system. For this purpose, individual users are given unique names:

- a *login string* or *user name*.
- Furthermore, only authorized users should be allowed to log in. Along with the unique name, each user is given a unique password. When a new user is added, the system administrator will usually assign a password (unless none has yet been given).

When the computer is booted and ready for work, the login mask appears (see Fig. 4.1).

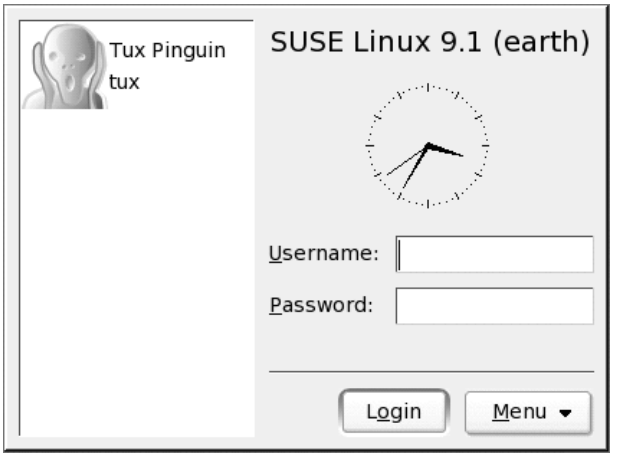


Figure 4.1: The Login Mask

If the system login was successful, the KDE desktop environment will be launched after a few seconds.

Figure 4.2: The KDE Work Environment

A welcome window is displayed. You can read the information or just close it by pressing the “X” button in the top right corner of the window.

Figure 4.3: Close the Window

4.1.2 Logging Out of the System

When you are ready to log out of the system, you have to open the KDE menu by clicking on the first (left) icon in the bottom panel. At the bottom of the KDE menu (see Fig. 4.4), locate the `Logout...` entry. Alternatively, you can right-click on the window background and select the same option from the context menu.

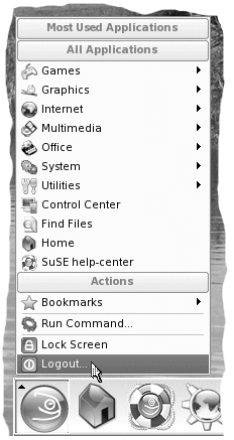


Figure 4.4: The KDE Menu

If you click `Logout...`, a menu appears (see Fig. 4.5 on the facing page) asking you which option you want to be performed with your logout:

`End session only` If you select this item and click the `OK` button, the KDE session will be closed. The login screen (see Fig. 4.1 on page 34) will appear, allowing you or another person to log in.

`Turn off the computer` If you select this item and click the `OK` button, your session will be closed and the computer will shut down.

`Restart computer` If you select this item and click the `OK` button, your session will be closed and the computer will reboot.

Figure 4.5: The Logout Menu

4.2 How to Shut Down and Reboot the Linux System

If you are at the login mask (see Fig. 4.1 on page 34), you can shut down or reboot your computer by opening the `Menu`menu and selecting one of the following options:

`Session Type` You can choose another window manager than KDE. For the simplicity of this study kit, we will cover the KDE environment only.

`Restart X Server` You can restart the program that's responsible for the graphical user interface. Remember, SUSE LINUX does not need a graphical user interface to work. The GUI is clearly separated from the operating system. However, in this study kit we will only work from the GUI interface.

`Shutdown...` With this option, you will be asked if you want to shut down or restart your computer (see Fig. 4.6 on the next page). If `Turn off computer` is activated and you click `OK`, Linux will close all the (system) programs currently running. Older computers that do not have power management and cannot switch themselves off can be switched off by the user when the following message appears:

```
Master Resource Control: runlevel 0 has been reached
```

If you switch the machine off too soon, this could possibly lead to loss of data.

Attention! You should *always* shut down your computer before you turn it off.

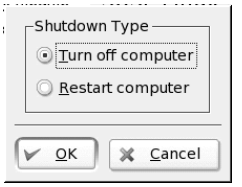


Figure 4.6: Ending Linux Before Switching Off

4.3 The KDE Desktop and Windows

After you log in, your system will by default start the KDE desktop environment. It is composed of two main parts:

- the desktop and
- a bar at the bottom, called *KDE panel* or *Kicker*

4.3.1 Desktop

On the desktop you will see only a few icons. You can start the applications associated with these icons by clicking on them *once* with your left mouse button.

You can move the icons by dragging them with the mouse.

4.3.2 Kicker

The KDE desktop is operated by using the mouse on the panel, which is also called the *KDE control panel* or simply *Kicker*.

Figure 4.7: Kicker

The most commonly used icons and their functions, from left to right, are described below:

- Green icon with chameleon head: Menu of all configured programs and functions (not of all programs and functions installed on the machine). This menu is called the *KDE menu*.
- Blue house: Konqueror, as the preferred KDE file manager.
- Lifesaver with a chameleon head: The SUSE HelpCenter.
- Globe with gear wheel teeth: Konqueror, as preferred KDE Web browser.
- "E" with letter: The KMail e-mail program.
- The white and grey box: Virtual desktops.
- The empty area right of the virtual desktops: Task Manager area.
- Clipboard with "k": Clipboard.
- Loudspeaker: A sound mixer.
- Sheet with "i": SuSEwatcher for automatic updates.
- Computer card: SuSEplugger for plug and play.
- Clock

4.3.3 The KDE Menu

Programs are normally started from the KDE menu. You can click the menu button to open the KDE menu. This menu consists of three sections:

`Most frequently used applications` As indicated by the name, this section lists the five most frequently used applications. Accordingly, the listed entries may change from time to time.

`All applications` This section features an overview of various applications sorted by subjects (such as `Multimedia`).

`Actions` This section provides a command line interface, an overview of the bookmarks, an entry for locking the screen, and the entry for logging out.

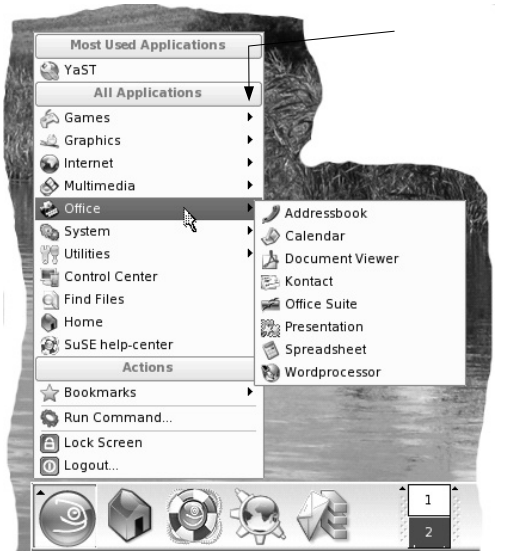


Figure 4.8: Submenus Marked with a Small Arrow

A submenu in the KDE menu is marked by a small black arrow in the right-hand corner (see Fig. 4.8 on the facing page). The entry does *not* need to be clicked for it to open. Just move the mouse cursor over the menu entry. To start a program, click *once* with the mouse on the corresponding entry.

4.3.4 Virtual Desktops

If you are working with a number of programs concurrently, the screen may quickly become cluttered with open windows, causing confusion. In Linux, you can bring order to this chaos by changing to another (virtual) desktop. You can switch between the various desktops via the control panel. By default, two virtual desktops are configured. In the KDE control center, you can increase the number of usable virtual desktops up to sixteen (see Chapter 4.4 on page 47). Every virtual desktop can host a virtually unlimited number of applications. Using these virtual desktops, you can easily organize your work.

4.3.5 The Clipboard

Copying Text with Klipper

When you are composing a document, you may want to use existing text. For example, you might be writing a letter with a word processor and decide that you want to quote a paragraph from an Internet page. To avoid typing this text again, you can use the *clipboard* which, in KDE, is also called *Klipper*.

Klipper has a small clipboard icon on the right edge of the control panel (see Figure 4.9). To copy text into Klipper, highlight the desired text by moving the mouse cursor over it with the left mouse button held down.

Figure 4.9: The Klipper Symbol in the KDE Panel

To insert the copied text, set the mouse cursor at the desired insertion point; then middle-click to paste. On 2-button mice, you can press the left mouse button and the right mouse button at the same time to simulate the middle mouse button.

Klipper can remember up to seven highlighted texts. If you click the Klipper icon in the control panel, a menu displaying the highlighted texts opens on your screen. Select the text you want to insert the next time you press the middle mouse button.

You can also use the standard keyboard shortcuts (Ctrl and X, C, or V) to cut or copy and paste data between applications or within the same application. However, Klipper is much faster.

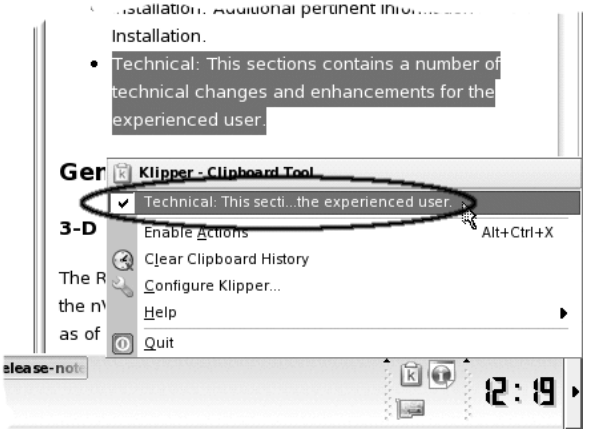


Figure 4.10: Highlighted Text Saved by Klipper

4.3.6 Managing Icons

Desktop

You can create a new icon on your desktop in different ways. For simplicity, we will describe only one method.

To create an icon for an application on your desktop, select the item in your KDE menu. Hold down the left mouse button, move the mouse pointer to free space on your desktop and release the mouse button. In the appearing menu, select `Copy Here`.

Kicker

You can add new programs to the control panel by right-clicking on a free area of the panel and then selecting `Add`. You can remove a program from the control panel by right-clicking its icon in the control panel and then selecting `Remove` *`Program name`* `Button`. You can move icons in the panel by holding down the middle mouse button or by choosing `Move` from the Context menu.

KDE Menu

To make changes in your KDE menu, you must first start the KDE Menu Editor. You can start the menu editor by clicking the KDE menu icon with the right mouse button and selecting `Menu Editor`.

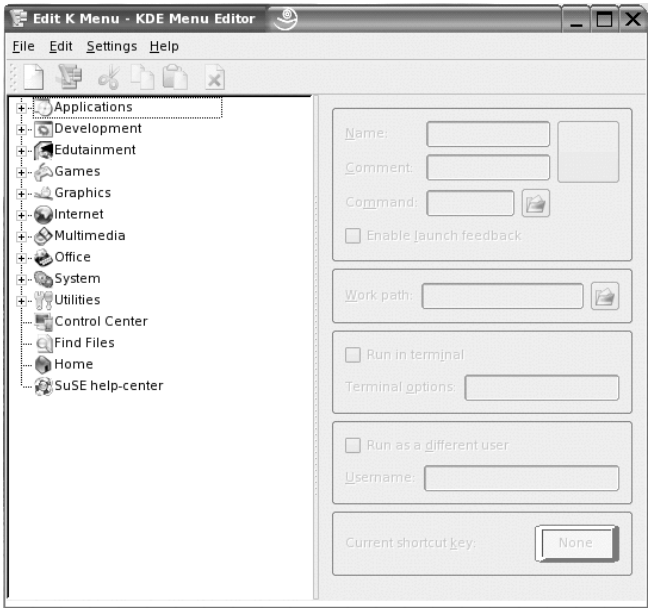


Figure 4.11: The KDE Menu Editor

4.3.7 Managing Windows

Every window displays its operating elements in the top margin (see Fig. 4.12). After clicking the leftmost symbol, a context menu for the window manipulation opens. Close a window by clicking the "X" symbol on the far right. Click the square symbol next to it to make the window fill the entire screen. Click the line next to it to reduce the window to symbol size in the task bar of your panel without closing it (and without ending any programs that may be running in it). Some programs have another button with a question mark to the left of the minimizing symbol. This element calls up the emergency help.

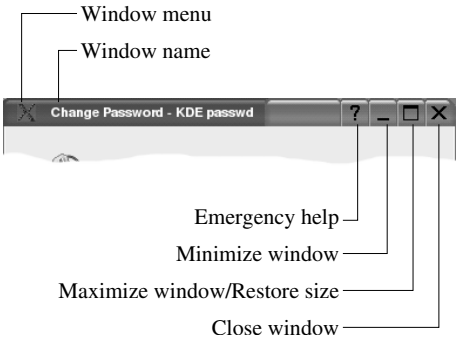


Figure 4.12: Icons in the Title Bar of a Window

To move the entire window without changing its size, click the titlebar of the window with the left mouse button and hold the mouse button down. You can now move the window.

To change the size of a window, move the mouse pointer to the edge of the window to move until the pointer changes its shape (double arrow, see Fig. 4.13 on the facing page). Then click the edge of the window and change the size. If you move the mouse cursor over the corner of the window, the mouse cursor changes to a diagonal double arrow which you can use to change the size of the window both horizontally and vertically.

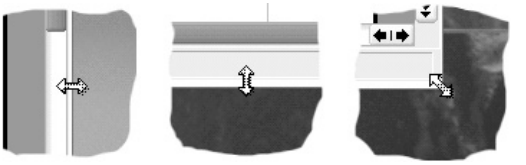


Figure 4.13: Icon for Changing the Size

Right-clicking the titlebar of the window opens a menu providing the same options as the icons in the panel (moving, sizing, minimizing, maximizing). If you click the `Shade` menu entry, the window rolls up–only the titlebar of the window remains on the desktop. Select `Advanced` → `Keep Above Others` to keep the window in the foreground so that it cannot be covered by any other window. Use the `Advanced` → `Keep Below Others` option to keep the window below other windows. You can use the `To Desktop` entry to move a window to any virtual desktop you want while selecting `All Desktops` makes the window visible on all virtual desktops.

After this quick introduction, you are ready to explore your KDE environment with the following exercise.

Exercise: Explore Your KDE Desktop

1. Start your computer.
2. Enter your login name (username) in the `Username` textbox.
3. Enter your password in the `Password` textbox. For security reasons, asterisks are displayed instead of the actual letters when you enter the password.
4. Click the `Login` button.
5. Close the KDE welcome screen by clicking the 'X' at the upper right corner.
6. Open the KDE menu by clicking the leftmost icon in the bottom panel.
7. Select `Logout...`.
8. Select `Close the session`.
9. Press the `OK` button.

10. Open the Menu menu.
11. Select Shutdown... .
12. Select Restart computer and press OK .
13. After the computer has restarted, you will see the Login window again. Enter your username in the Username textbox.
14. Enter your password in the Password textbox.
15. Click the Login button.
16. Close all windows that open automatically by pressing the "X" button in the right top corner of the window.
17. Start the SUSE HelpCenter by clicking on the lifesaver icon in Kicker.
18. Highlight the first text line ("A short description...") by moving the mouse cursor over it with the left mouse button held down.
19. Switch to the second virtual desktop by clicking the lower grey box with the label "2" in Kicker.
20. Start a standard editor from the KDE menu (Utilities → Editor).
21. Press the middle mouse button (or press the right and left mouse buttons simultaneously on a 2-button mouse) over the white editor text area and insert the buffered text.
22. Save the text (File → Save As...) with the myfile file name. To do so, insert myfile in the Location text field and click Save .
23. Close the editor.
24. Switch back to the first virtual desktop.
25. Move the SUSE HelpCenter window and change its size.
26. Move the window to virtual desktop 2 by right-clicking on the titlebar and selecting To Desktop → Desktop 2.
27. Maximize the window.
28. Close the window.

4.4 How to Modify the KDE Environment

KDE provides a very convenient tool, the KDE Control Center (see Fig. 4.14), for various settings you can make to influence the appearance and function of the desktop. You can start the KDE Control Center by selecting KDE menu → `Control Center`.

The functions in the Control Center are summarized in categories such as `Appearance & Themes` and `Peripherals`. Click a category name or icon to access a submenu. If you click an entry, the configuration options will be displayed to the right. To activate your changes, click `Apply` at the bottom of the frame. Click `Back` in the left part of the window to return to the main window.

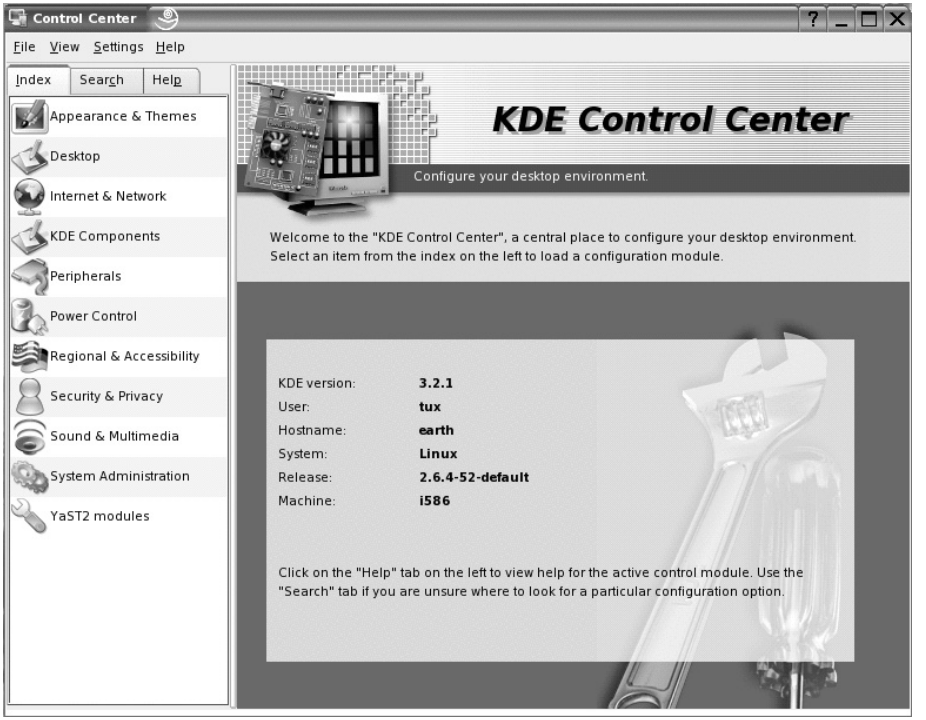


Figure 4.14: The KDE Control Center

The most important settings of the KDE Control Center are listed below:

Appearance & Themes

`Background`	Background color and wallpaper
`Colors`	Colors of the window components
`Fonts`	Fonts
`Icons`	Icon selection gallery
`Screen Saver`	Type and activation parameters for the screensaver
`Style`	`Style`: Appearance of buttons, sliders, control boxes, etc. `Effects`: Drop-down and other menu animations
`Window Decorations`	Appearance of the window title bar

Table 4.1: KDE Control Center: Configuring Connected Devices

Desktop

`Behavior`	Toggle preview for different file formats, significance of mouse clicks on the desktop
`Multiple Desktops`	Number and labels of the virtual desktops
`Panels`	`Arrangement`: Size and position `Hiding`: Automatic hiding
`Taskbar`	Kicker preference settings
`Window Behavior`	`Focus`: Ability to activate windows `Actions`: Significance of mouse clicks `Moving`: Positioning behavior

Table 4.2: KDE Control Center: Customizing the Desktop

KDE Components

File Associations	File type associations
File Manager	Appearance: Font type and color Behavior Konqueror start page
Spell Checker	Selection of a spell-checking dictionary

Table 4.3: KDE Control Center: Customizing the Appearance

Peripherals

Mouse	General: Use of mouse buttons, single- or double-click to open files, size of mouse cursor Cursor Theme: Appearance of the mouse pointer Advanced: Sensitivity, speed
Printers	Overview of available printers Jobs: Management of the print jobs

Table 4.4: KDE Control Center: Customizing the KDE Components

Regional & Accessibility

Accessibility	Special accessibility settings for disabled users
Country/Region & Language	Language, date format, numeric representation, etc.
Keyboard Shortcuts	Association of keyboard shortcuts to functions

Table 4.5: KDE Control Center: Regional Settings & Accessibility

The control center also features modules (such as System Administration → Login Manager) that only a system administrator is allowed to change. These modules are password-protected against unauthorized access. To make changes to these modules, you can click the Administrator Mode button and enter the root password.

Exercise: Modify your KDE Desktop Environment

This exercise will introduce you to the basics in customizing your workspace in the KDE environment.

1. Start the KDE Control Center via KDE menu → `Control Center`.
2. Select the screensaver configuration mask by choosing `Appearance & Themes` → `Screen Saver`
3. Change the active screensaver to `Visit to Flatland` → `Starfish` and click `Apply`.
4. Click the `Back` button on the top of the left pane.
5. Now click `Desktop` and then `Multiple Desktops`.
6. Use the slide bar to increase the number of virtual desktops to 4; then click `Apply`.
7. Close the Control Center window.

4.5 How to Access a Command Line from Within KDE

the command level of the operating system is completely available even when you are using the graphical desktop. Other programs such as Konsole (the default in KDE) or xterm imitate the command level in the X Window System.

Figure 4.15: The KDE console, Konsole

Occasionally you may need to run just a single command. Perhaps you want to start a program you cannot find in the KDE menu. A command line exists for such cases. You can access the command line in the KDE menu via `Run Command...` or, more quickly, using the (Alt) (F2) key combination.

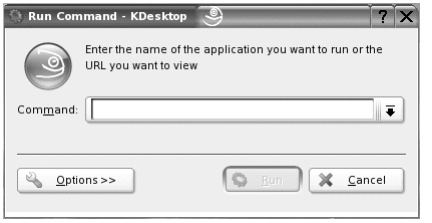


Figure 4.16: KDE Command Line

Enter the command in the text line labled `Command`. The command will be executed when you click `Run`.

4.6 How to Change Your Password

You can use the kdepasswd utility to change passwords. You can access this utility from the KDE menu by selecting → System → Change Password. .

Figure 4.17: Changing the Password

First, enter your old password. Then enter the new one twice. For reasons of security, the password here remains invisible. In addition, passwords that are too short or too simple are not accepted. After you type the new password the second time, the program changes the corresponding entry in the system.

Exercise: Changing Your Password

Now, you will change your password in this quick exercise.

1. Start kdepasswd by selecting → System → Change Password from the KDE menu.
2. Enter your old password "secret ."
3. Enter a new password "SUSE" in the next Password text field. For verification, you also have to enter it in the Verify text field.
4. Click OK .

You now have successfully changed your password. Be sure to remember that Linux passwords are case-sensitive and that you now have a password of SUSE with all uppercase letters.

Summary

- You can safely bring your Linux system up and shut it down.
- You can log in and log out of the system.
- You familiarized yourself with the basic concepts of the KDE desktop environment.

5 Manage the Linux File System

Objectives

After you complete this chapter, you should be able to do the following:

- Describe the Linux file system and be able to store and find files you create on your Linux system.
- Understand the main principles of access control in the Linux file system and be able to apply security to your files.
- Describe how to work with files on a Linux system and be able to create your own working space on your system.
- Describe how to work with removable devices such as CD-ROM drives or floppy diskettes and be able to store data on or retrieve data from such devices.

5.1 Describe the File System Structure

5.1.1 File Names in Linux

A file name can be up to 255 characters long. It may contain any number of special characters ('_' or '%', for example). Certain special characters (the dollar sign "$", the semicolon ";", or the space, for example) have a specific meaning. If you want to use one of these characters without the associated special meaning, the character must be preceded by a "\" (backslash) so its special meaning is masked (switched off). Umlauts, letters with diacritical marks, or other country-specific characters can be used. Using them, however, can lead to problems when exchanging data with people in other countries using other settings if these characters are not present on their keyboards.

Linux differentiates between upper-case and lower-case letters. For example, `Invoice`, `invoice`, and `INVOICE`identify three *different* files.

5.1.2 Basic Principles

The Linux file system is a hierarchical arrangement of *directories* and *files*. The basic structure is the same for all UNIX derivatives. Data is classified according to the following criteria:

- Distinction is made between *static* files (those that are not modified during operation, such as documentation) and *dynamic* files (those that can be changed, such as configuration files).
- Files are ordered according to their functionality, such as executable programs, configuration files, or help files.
- Distinction is made between operating system files and user files.

5.1.3 Structure

The hierarchically built file system starts with the root directory (*root*), which is denoted by the slash, "/". The root directory contains a series of directories and subdirectories ordered according to the above-mentioned principles (see Figure 5.1 on the facing page). When referring to such a subdirectory, the slash (without a space) is placed in front of the directory (`/home`, for example). Further subdirectories are also separated from each other by a slash (`/home/tux/`).

A characteristic of the Linux file system is that the structure does not depend on the physical storage medium in which the directories are actually located. For example, if a computer is equipped with two hard drives, the `/usr/` directory can be stored on one drive and all user data (the `/home/` directory) can be stored on the other drive. Both directories are, however, directly attached to the file system in the root directory, so users do not even notice that the hard drive has changed when they change directories.

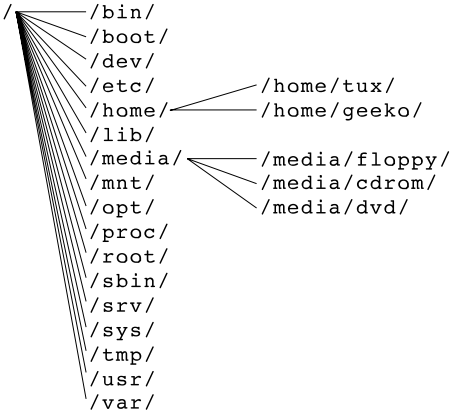


Figure 5.1: Structure of the File System

5.1.4 The Most Important Directories

The Home Directories

The `/home/` Directory Because many people can work on a Linux computer at the same time, the data of an individual user must be clearly separated from that of another user. To achieve this, each user is assigned a home area (`/home/`*`name`*`/`)[1]. This directory can be organized according to personal requirements. This is where directories can be created, data stored, and personal programs installed.

[1] *name* is used here just as a place holder. The user's subdirectory is usually marked with his login string (login name). For a user who logs in to the system with *tux*, the directory is called `/home/tux/`.

The path for the user's home directory can be abbreviated with the tilde symbol ("~"). For example, for the user *tux*, `~/Documents/` corresponds to the path `/home/tux/Documents/`.

The `/root/` Directory The system administrator (called *root* in Linux) also needs a home directory. This directory is called `/root/`.

Other Storage

The `/media/` Directory `/media/` contains a subdirectory for each replaceable medium (for example, floppy disk drives, CD-ROM drive, CD burner). Here, the contents of such a data storage medium are mounted into the file system.

The `/mnt/` Directory `/mnt/` is the default directory for temporarily mounting file systems such as other partitions or for accessing directories exported over the network.

The `/dataX/` Directories Depending on the hardware equipment and the configuration of the computer, the root directory may contain directories like `/data1/`, `/data2/`, `/data3/`, and so on. These directories allow access to other hard disks or partitions.

Temporary Files

The `/tmp/` Directory In the `/tmp/` directory, some programs create temporary files to store data. The content of this directory is regularly deleted, depending on the configuration, sometimes upon system start-up.

5.2 How to Use the Konqueror File Manager

5.2.1 Navigate Through the File System

Nearly all work on the file system can be carried out with the KDE program Konqueror. To start Konqueror, click on the blue house icon in Kicker.

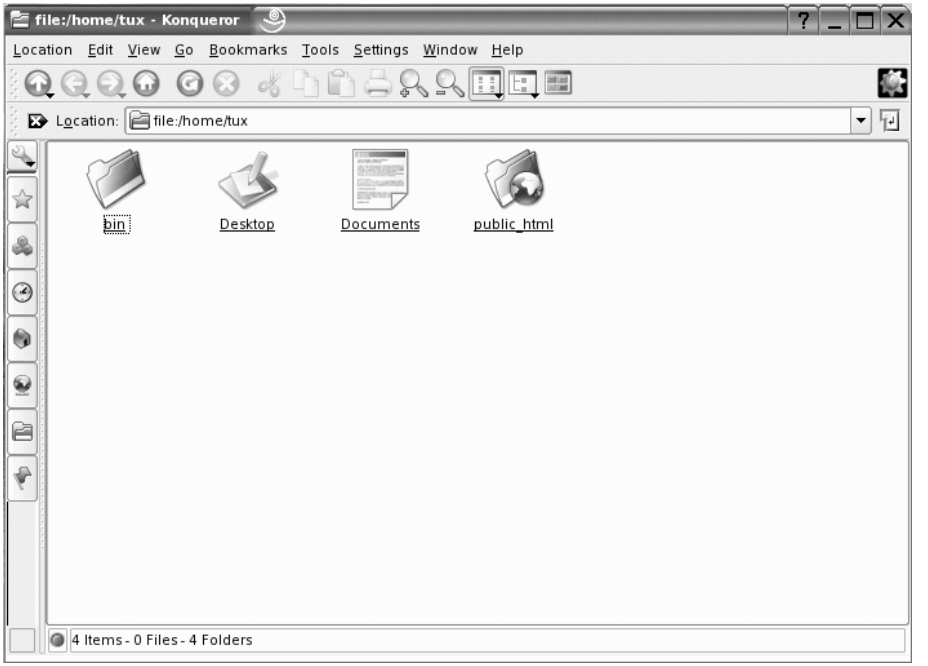


Figure 5.2: Konqueror at the First Start-Up

To navigate quickly through the file system, try activating the *navigation area*, which splits the main window and displays the directory tree. Activate the navigation panel using the icons on the left side of the window. The icon with the blue house displays the directory tree starting from the user's home directory. The icon with the folder displays the directory tree starting from the root directory.

The Konqueror window (see Figure 5.3 on the next page) is divided into three sections. The top section contains a menu bar, a toolbar, and an address panel, and a bookmark panel. The window to the left is the preset navigation area, which serves primarily for navigation and orientation. The panel on the left side of the navigation area can be used for quicker navigation. Here, you can specify what to display in the navigation area. The right window contains the *file view*. This window displays the contents of the directory in which you are located.

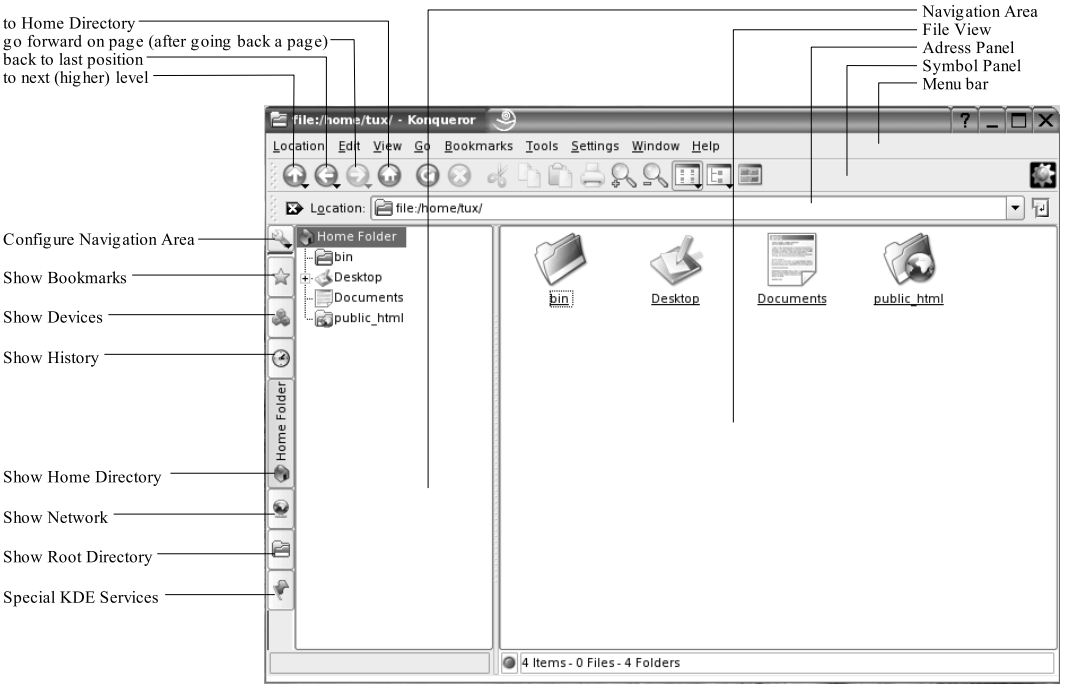


Figure 5.3: The Different Parts of Konqueror

You can use several methods to navigate in the file system. The three arrows on the left side of the toolbar represent the simplest way. The current position can be seen in the text window of the URL panel (in the above example, `/home/tux/`). If you click the arrow pointing upwards, you will move from the current directory to the next highest directory (from `/home/tux/` to `/home/`). The arrow pointing to the left returns you to the previously visited location. You can move forward again with the right arrow. You can open a directory and view its contents by the clicking the directory in the file view. If you click a normal file, KDE tries to open it or starts a program to open it.

Clicking the house symbol in the toolbar takes you directly to your own home directory (for example, `/home/tux/`).

The second way of navigating is provided by the navigation area. If you click a directory in the navigation area, its contents are displayed in the file view. You can double-click the directory in the navigation area to open it and view all subdirectories in it. Double-click the directory again to close it.

5.2.2 Owner and Access Permissions

To separate the data of different users on a Linux multiuser system, as already mentioned above, users are assigned their own home directories in which to store personal data. This simple separation of data does not, in itself, effectively protect data against unwanted access from other users. *Owner and access permissions* are therefore assigned to stored data and executable programs.

To view the assigned permissions, change to the tree view by clicking the second icon from the right in the toolbar.

To facilitate access to data, users are divided into three categories:

- Each directory and each file is first uniquely assigned an *owner* (see column `Owner` of figure 5.4 on the following page).
- In addition, each user belongs to one or more *groups* of users, who might, for example, be working on a project together and need access to the same data. For this reason, files are assigned not only to an owner, but also to a group (see column `Group` of figure 5.4 on the next page).
- All other users apart from this group are referred to as *others*.

In the `Permissions` column (see Figure 5.4 on the following page), the permissions for these three groups are displayed as follows:

Owner	Group	Others
`rwx`	`rwx`	`rwx`

Table 5.1: Permissions of the Owner, Group, and Others

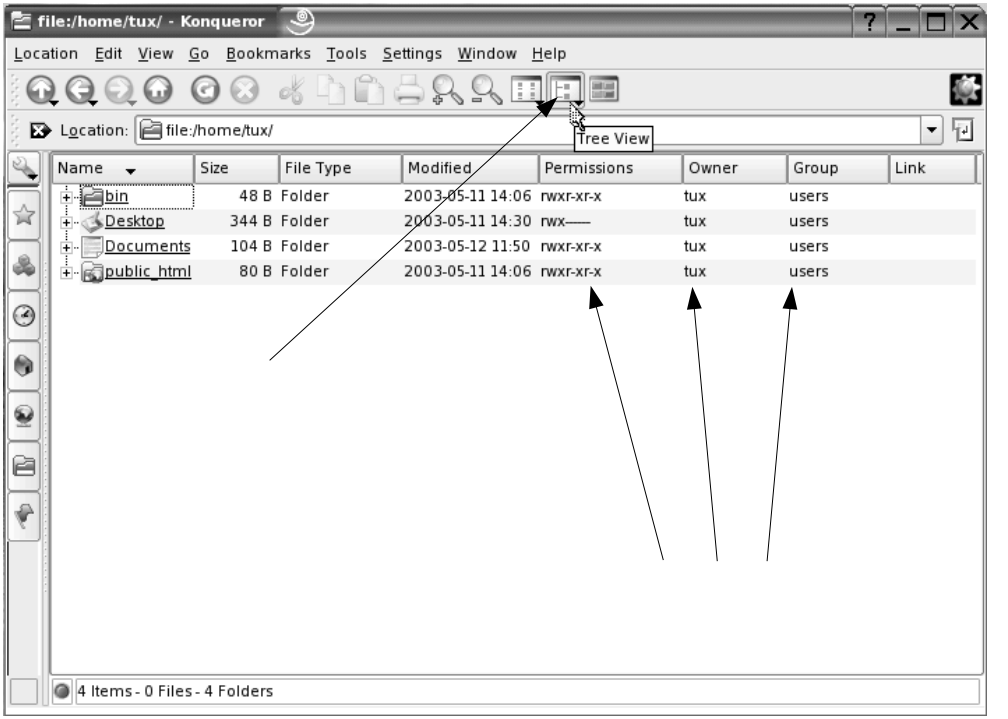


Figure 5.4: The Tree View in Konqueror

The permissions for files and the permissions for directories are different. For *files*, the symbols mean

- `r` (*read*) authorization to see the contents of the file – read access
- `w` (*write*) authorization to change the contents of the file – write access
- `x` (*execute*) authorization to run the file as a program – execute access

For *directories*, the symbols mean

- `r` authorization to list the contents of the directory
- `w` authorization to create or delete files or subdirectories
- `x` authorization to change into the directory

For example, a directory with the rights `rwxr-xr-x` can be accessed for reading by the owner, the members of the group *users*, and any other user. However, only the owner himself can change the contents of the directory and create subdirectories. In the same way, the owner, the members of the group *users*, and all others may change to the directory.

A file that has the permissions `rwxr-xr-x` can be read, modified (edited), and run by the owner, while all others (even members of the group) may only read the file and run it.

To modify permissions for files or directories, right-click a file and select `Properties` from the pop-up menu. If you click the `Permissions` tab, a dialog appears as shown in Figure 5.5 for files or a dialog as shown in Figure 5.6 on the following page for directories.

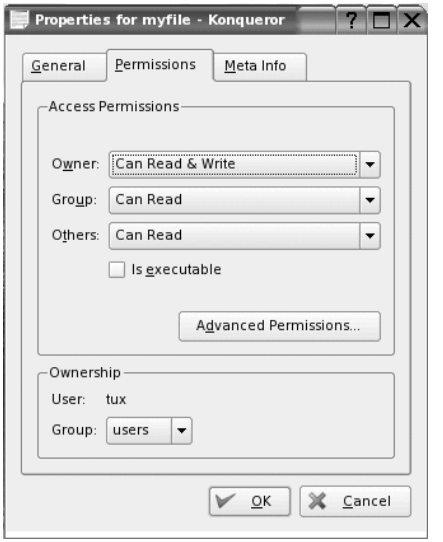


Figure 5.5: Permissions for a File

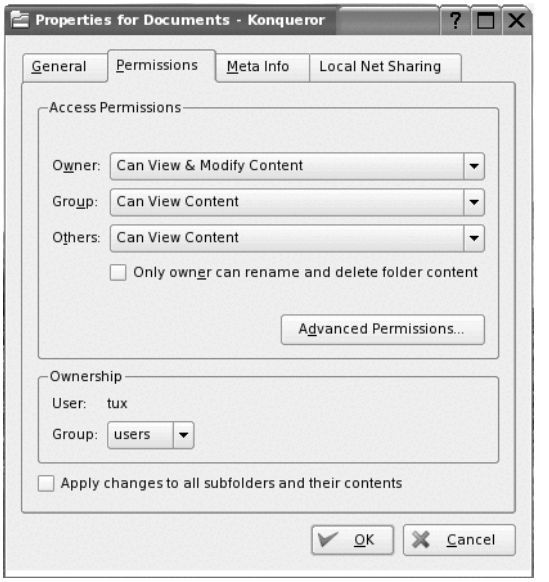


Figure 5.6: Permissions for a Directory

The access permissions can be set by simply clicking the pull-down menu. This only works if you actually have the permission to make the changes.

5.2.3 Creating Directories

To create a new directory, click on the white background of the file view. In the menu that appears, select `Create New` → `Folder`. When a window opens, enter the name of your new directory. Press `OK` to finish the creation process.

Figure 5.7: Create a New Directory

Exercise: Create a Directory

1. Start the Konqueror by clicking the blue house icon in Klipper.
2. Enter the `Documents` directory by clicking the icon once with the left mouse button.
3. To create a new subdirectory, click the right mouse button somewhere on the white background of the Konqueror window.
4. Select `Create New` → `Folder`.
5. Enter `FirstFiles` as the directory name.
6. Press the `OK` button.

5.2.4 Copying and Moving

The explanation below using files is also valid for directories. To copy a file, you must have read permission for the file and write permission for the target directory to which the file is being copied.

One way of copying a file is to use the navigation panel. Another way is to split the file view window of Konqueror. Access this via `Window` → `Split View Left/Right` or `Split View Top/Bottom` (see Figure 5.8 on the next page). Now you can see the data content of two directories. To change one view, just activate that window with a single mouse click and navigate to the

location you want. The active window is marked with a small green dot at the left bottom corner. In one window, open the directory containing the file you want to copy and, in the other window, open the directory to which you want to copy the file.

Click the file with the left mouse button and, keeping the mouse button pressed down, drag the mouse over to the other file view window. Then release the button.

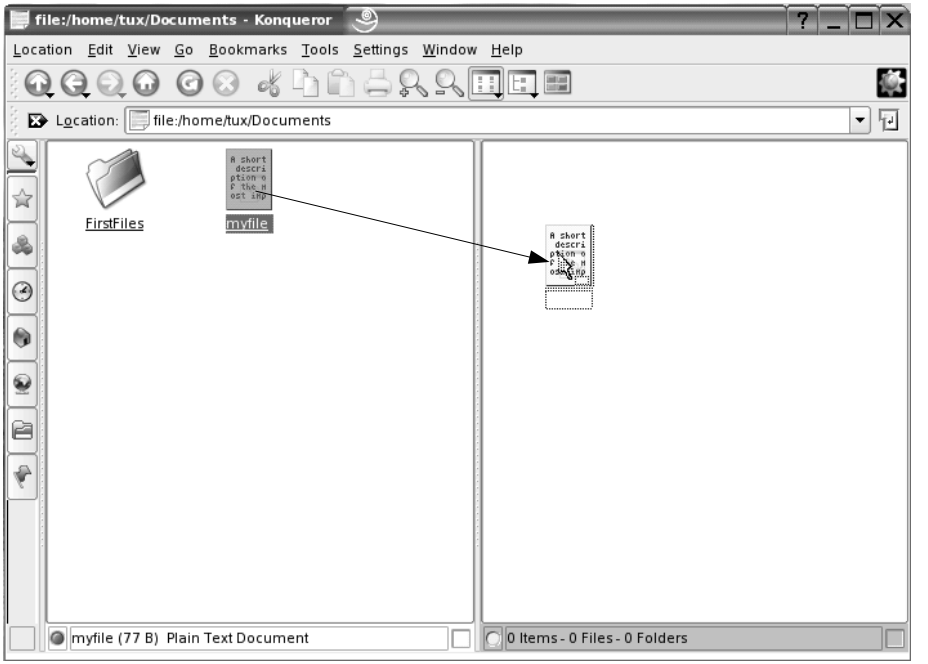


Figure 5.8: Dragging a File to Copy It

When you let go of the mouse button, a small pop-up menu appears (see Figure 5.9 on the facing page). If you then select `Copy Here`, the file is *copied*. The original file remains intact. `Move Here` *moves* the original file here.

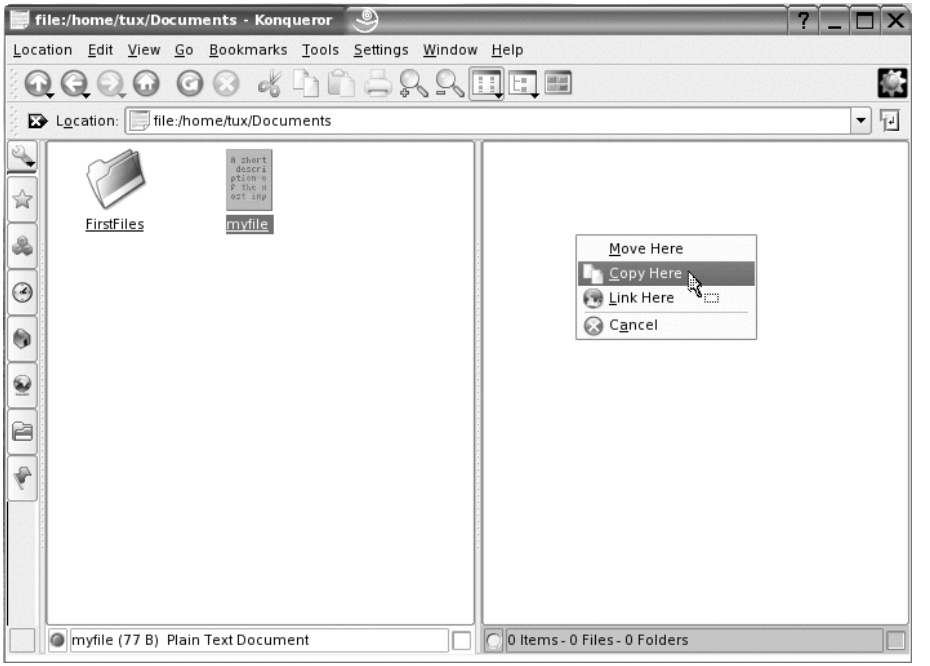


Figure 5.9: The File Should Be Moved

Several files can also be copied and moved at the same time. If you hold down (Ctrl) while selecting files to copy, you can select several files simultaneously.

5.2.5 Renaming Directories and Files

To rename a file, right-click it and select the entry `Rename` from the pop-up menu. You can also use the entry `Properties` for renaming files. A window appears. Next to the file symbol is a text field with the file name. The file name can simply be overwritten. Click `OK` for the changes to take effect.

Exercise: Copying and Renaming Files

- Split the file view of Konqueror by selecting `Window` → `Split View Left/Right`
- Activate the right window by clicking on its white background.
- Open the `FirstFiles` directory by clicking the icon once with the left mouse button. The data content of the directory `~/Documents/FirstFiles` is shown. (The directory is empty.)
- Select the file `myfile` in the left window (`~/Documents/`), hold down the left mouse button, and drag the file into the right window. Release the mouse button.
- Select `Copy Here`.
- Rename the file `myfile` in the directory `~/Documents` (right window) to `myfile1`. Click with the right mouse button on the icon, select `Rename`, enter `myfile1` and press (↵).
- Repeat steps 1 through 6 four times, but rename the copied files `MyFile1`, `myfile2`, `myfile2a`, and `myfile3`.
- Repeat steps 1 through 6 one more time, but do not rename the copied file.

5.2.6 Deleting Directories and Files

You can delete files in two ways:

1. Throw the files into the trash can
2. Delete them immediately (without going through the trash can)

The safest method for deleting a file is to throw the file into the trash can, because it can be restored before the trash is emptied. To do this, right-click the file you want to remove. Select `Move to Trash` from the pop-up menu (see Figure 5.10 on the next page).

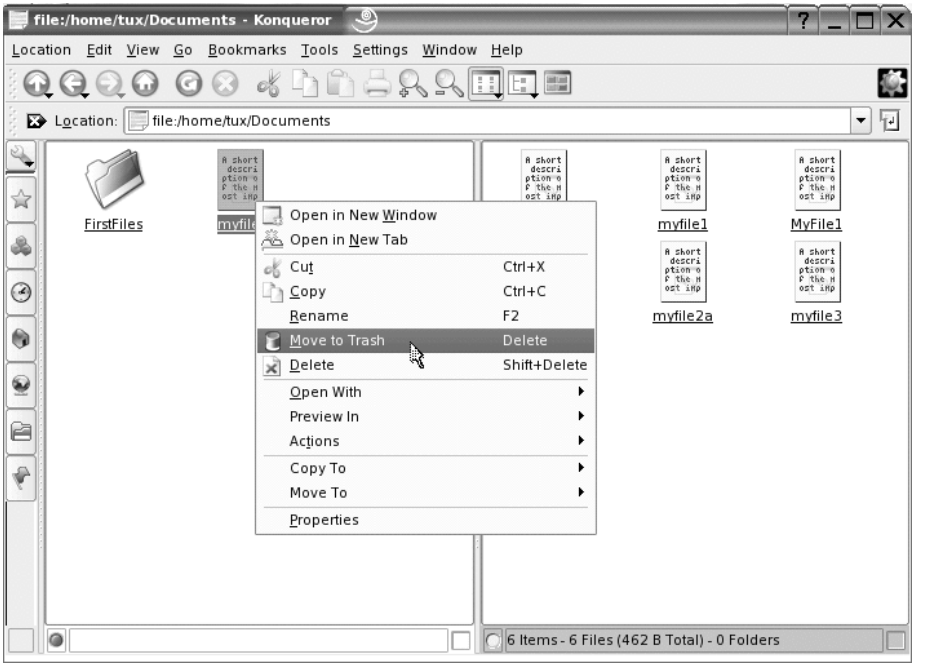


Figure 5.10: Discarding a File in the Trash

You can move a file to the trash by dragging the file with the mouse over the trash can icon and then releasing the mouse button. The trash can icon on the desktop changes as soon as it contains something. To see what is in the trash can, double-click it. You can see the files that have been moved there or perhaps even retrieve one (keyword: moving).

A file that has been thrown in the trash has not really been deleted, so it still takes up hard drive space. To permanently remove or delete the items in the trash can, you must empty it. To empty the trash can, right-click the trash can icon on the desktop. In the pop-up menu that opens, select `Empty Trash Bin` (see Figure 5.10).

Figure 5.11: Emptying the Trash

The second way of deleting a file is to right-click it and then select `Delete`. The file is deleted completely and cannot be recovered.

Exercise: Trash Can

1. Throw the file `~/Documents/myfile` into the trash can.
2. Empty the trash can by right-clicking the trash icon and selecting `Empty Trash Bin`.

5.2.7 Connecting Files: Links

Links are references to files or directories. Using links, you can access the same files from different locations in the file structure without the file physically existing multiple times. Links are thus a wonderful way of keeping order and avoiding redundancy.

If you are working with a linked document, the original file is stored in only one directory, but a link to the document may be stored in other directories. The original file can now be opened in two ways: by opening the original file or by opening the link. The link is nothing more than a pointer to an original file, which is located somewhere else in the file system.

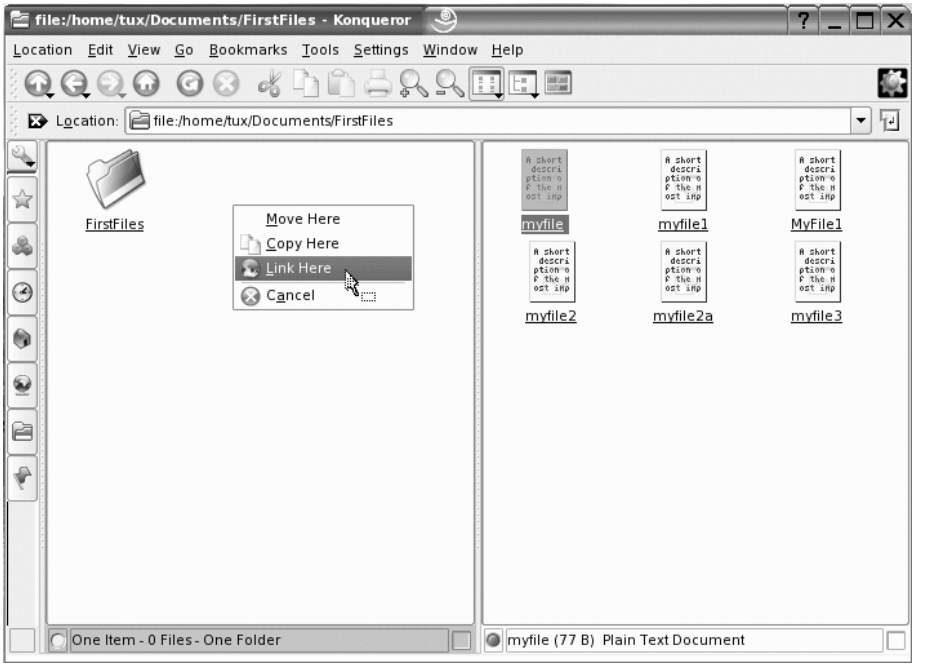


Figure 5.12: Linking Functions Like Copying

You can create a link in the same way you create a copy of a file: click the file, keep the mouse button pressed, drag the file, and drop it over the target directory. In the pop-up menu that appears, select `Link Here`.

Copying, moving, renaming, and deleting links works in the same way for both files and directories. You must be careful when deleting the original file. You must also delete any links. If you delete a file without deleting any of its links and then click on a link, an error message appears.

Exercise: Links

1. Create a link in the directory ~/Document/ (left part of the file view) pointing to the file ~/Documents/FirstFiles/myfile (right part of the file view). Select the myfile icon, hold down the left mouse button, move the pointer into the left window and release the mouse button.

2. Select Link Here.

3. Create a link on the desktop that points to the directory ~/Documents/FirstFiles/. To do so, select the icon of the directory FirstFiles, hold down the left mouse button, move the pointer onto the desktop background, and then release the mouse button.

4. Select Link Here.

5.3 How to Search for Files with KFind

Sometimes you need to find a file so you can edit it, but you do not know exactly where it is located in the file system. You might know the name of this file or only a part of the name. You might need a list of all files that have been modified in the last two days or that exceed a certain size.

The KFind program can be used to find files with specific features. KFind can be started from the KDE menu with the Find Filesentry. You can also start KFind directly in Konqueror using the menu item Tools → Find File....

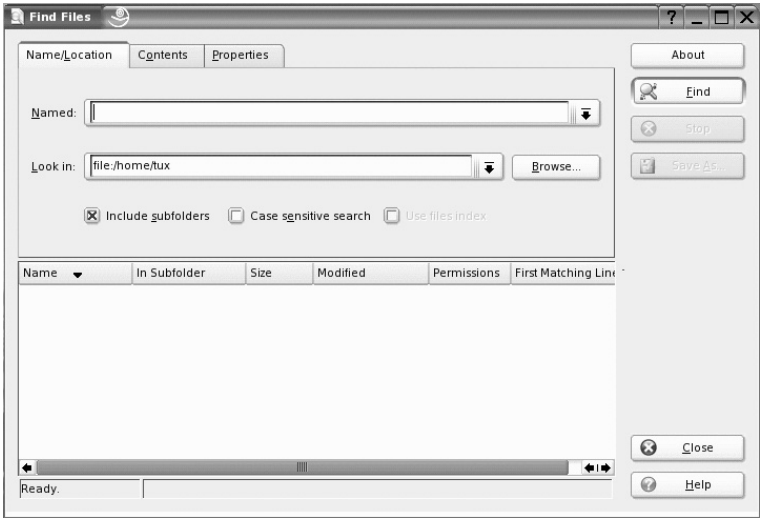


Figure 5.13: The KFind Search Utility

In the `Named` field, enter the name of the file you want to find. If the name of the file is not completely known, you can use the two *wildcards* "`?`" (for any character) and "`*`" (for none, one, or several characters).

Example: Suppose the following files exist:

- `File`
- `file`
- `File1`
- `File1a`
- `File1b`
- `File2`
- `File2a`
- `MyFile`

The following table shows the results of three different search strings:

Search string	File?	File*	?ile*
Found Files	File1 File2	File File1 File1a File1b File2 File2a	File file File1 File1a File1b File2 File2a

Table 5.2: Search Strings and Results

Enter the directory you want to search in `Look in`. If all subdirectories of this directory should be searched, check `Include subfolders`.

Click `Find` to start the search process. All matching files and directories are shown in the lower window with details of their locations (see Figure 5.14 on the next page).

Further settings can be made in `Contents` and `Properties`. In `Contents`, you can specify the file type, a string contained in the file, or the file size. In `Properties`, you can specify the date when the file to find was created or modified.

Exercise: Searching for Files

1. Start KFind via KDE menu → `Find Files`.
2. To find all files with `file` inside the file name, enter `*file*` into the text field `Named`.
3. Enable the check box `Case sensitive search` and press the `Find` button.

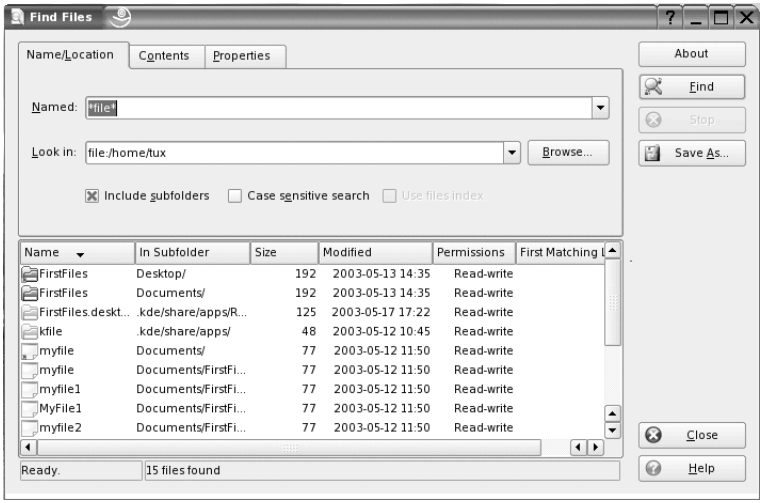


Figure 5.14: Successful KFind Search

5.4 How to Access Removable Media

5.4.1 Floppy Disks, CDs, and DVDs

As described in Section 5.1.4 on page 58, external media like floppy disks, CDs, and DVDs are mounted in the `/media/`directory. To access the the files on them, you just have to have rights to the directory. The available devices are shown as directories:

- `/media/cdrom/`
- `/media/cdrecorder/`
- `/media/dvd/`
- `/media/floppy/`

When you click the directory icon, the data content of the medium is shown.

5.4.2 USB Sticks

USB devices (such as USB memory sticks) are mounted in the `/media/` directory. The name is `/media/usb-`*`number`*, where *`number`* is a unique hardware identifier.

One difference exists between USB sticks and the other external devices described in the previous section: A few seconds after you plug a USB stick into the USB port, a window pops up and asks you what to do.

Figure 5.15: A USB Stick Is Found.

If you select `Yes`, the Konqueror will start automatically and show you the content of the USB stick. If you select `No`, the Konqueror does not start automatically. You can open it manually and see the content of the USB stick by navigating to the `/media/usb-`*`number`* directory.

If you want to see this dialog every time you plug in a USB stick, then you need to deactivate the checkbox `Do not ask again`.

Exercise: Copy Exercise Files to Your Home Directory

1. Insert a floppy disk with some Microsoft Word and Excel documents into your floppy disk drive.
2. Activate the left side of the file view by clicking once on the white background.
3. Open the navigation panel by clicking the red folder icon on the left side of the Konqueror window. The content of the `Root Folder` is shown.

4. Click once on the directory `media`. Its contents are shown in the right side of the file view.
5. Click once on the `Floppy` icon in the right side of the file view to open the directory.
6. Select all your Word and Excel documents with the mouse, move the mouse pointer into the left side of the file view (`~/Documents/`, and release the mouse button.
7. Select `Copy Here` to copy the files.
8. Close the Konqueror by clicking the "X" button.

5.5 How to Format a Floppy Diskette

The KFloppy application allows you to format a floppy disk. You can start the application from the KDE menu with `System` → `File System` → `KFloppy`. You can choose from two file systems:

1. DOS (FAT file system): These floppy disks can also be accessed by systems running Microsoft Windows.
2. ext2 (ext2fs): The standard format for Linux. It allows you to manage access permissions for the saved files.

Contemporary floppy disks are 3.5". Very old computers can still feature drives for 5.25" floppy disks. These floppy disks were larger than the currently used diskettes and had a capacity of 360 KB to 1.2 MB. The first generation of the currently used 3.5" floppy disks had a capacity (at "double density") of 720 KB. Contemporary "high-density" 3.5" floppy disks have a capacity of 1.44 MB.

`Quick format` only deletes the entries of the directory on the floppy disk. The actual files are not erased by this option. Only `Full format` reallocates the tracks and sectors on the floppy disk and overwrites existing files. You should use the Full format option to format a used floppy disk when you are deleting confidential files. Otherwise, special tools could be used to recreate the data.

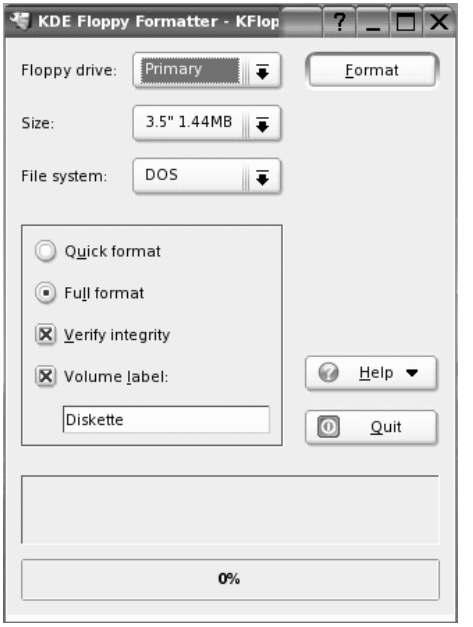


Figure 5.16: The Tool for Formatting Floppy Disks

Exercise: Format a Floppy Diskette

1. To start KFloppy from the KDE menu, select `System` → `File System` → `KFloppy`.
2. Insert a floppy disk into your floppy disk drive.
3. Press the `Format` Button. This will format the floppy disk in the DOS format.

Summary

- You can store files in the Linux file system and change access permissions to your files and directories.
- You can work with the files and directories you created and create links for your convenience.
- You can work with removable devices such as CD-ROM, floppy diskettes, and USB sticks to store and receive data from such devices.
- You can work confidently with floppy disks, which are still the easiest way to share small amounts of data between computers and users.

6 Working with the Installed Office Suite OpenOffice.org

Objectives

After you complete this chapter, you should be able to do the following:

- Understand the OpenOffice.org suite and its components, and perform the basic OpenOffice configuration.
- Establish compatibility with Microsoft Office in the OpenOffice suite so you can use MS Office-created documents in OpenOffice.
- Describe the configuration and help system of OpenOffice and use this Office suite on your Linux system.

6.1 A Brief History of OpenOffice.org

OpenOffice was developed from the StarOffice product whose source code was made freely available by Sun Microsystems, Inc. In turn, newer versions of StarOffice are based on OpenOffice.org. Therefore, the look and feel of OpenOffice.org and StarOffice are almost identical.

6.2 Starting the OpenOffice.org Components

OpenOffice.org is included in the SUSE distribution. Click the icon on the desktop to open an empty OpenOffice.org window.

Figure 6.1: The Icon for the Word Processor in OpenOffice.org

The first time you start OpenOffice.org, a wrapper program starts to configure some items. After the initial configuration, OpenOffice components start much faster.

You can start an additional OpenOffice.org component anytime from an already opened OpenOffice.org module by selecting `File` → `New`.

For example, you can start a new spreadsheet from the running word processor by selecting `New` → `Spreadsheet` from the `File` menu.

To start the individual components of the office package from the KDE menu:

Component	Name	Path
Word processing	Writer	`Office` → `Wordprocessor`
Spreadsheet	Calc	`Office` → `Spreadsheet`
Presentation	Impress	`Office` → `Presentation`
Graphics	Draw	`Graphics` → `Vector drawing`

Table 6.1: OpenOffice.org Components

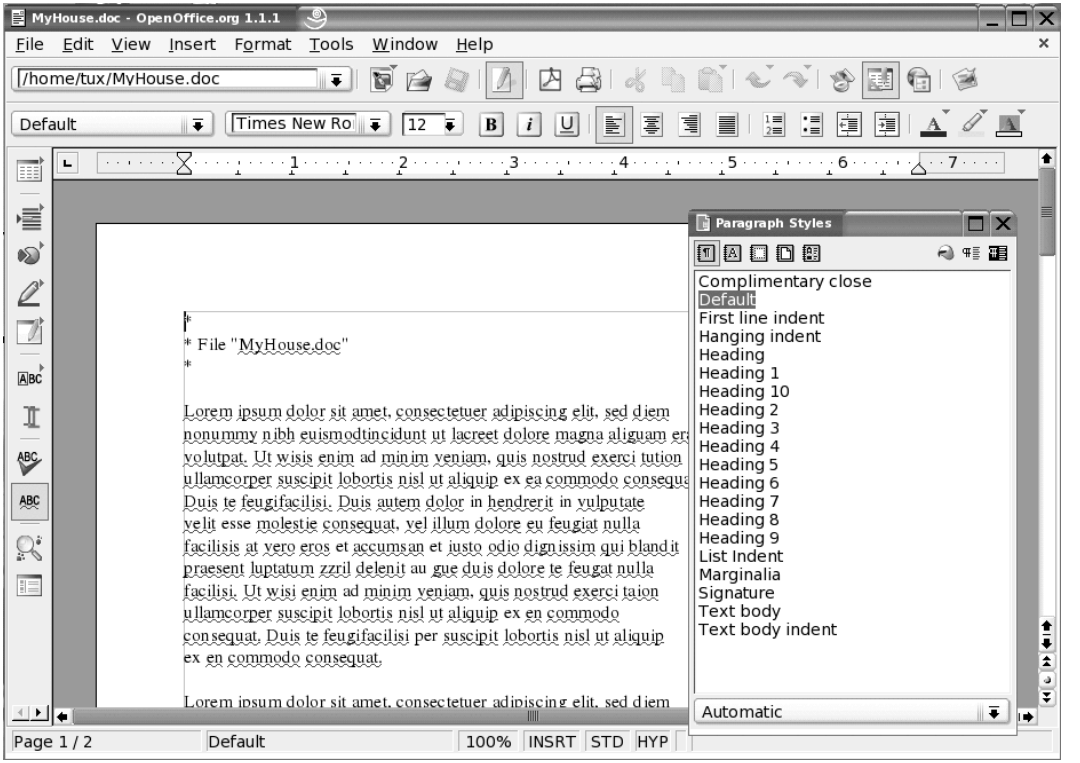


Figure 6.2: The Word Processor in OpenOffice.org

6.3 How to Establish Compatibility with Microsoft Office

Users experienced with other office suites, especially the Microsoft Office suite, should not expect any problems in handling OpenOffice.org. OpenOffice.org is able to open files stored in standard Microsoft Office formats. Just select the file from the `File` → `Open` dialog.

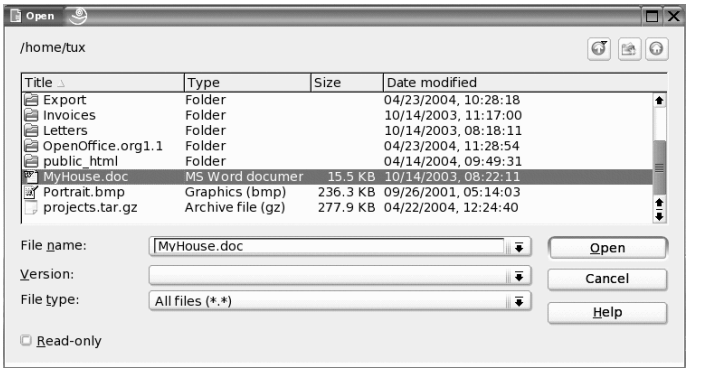


Figure 6.3: Opening a Microsoft Word File

Files created with OpenOffice.org can also be stored in standard Microsoft Office formats. For example, when you select `Save as...` from the `File` menu, you can select the `Microsoft Word 97/2000/XP` file format, which is offered for OpenOffice.org Calc spreadsheets. `Microsoft PowerPoint 97/2000/XP` is offered for OpenOffice.org Impress presentations.

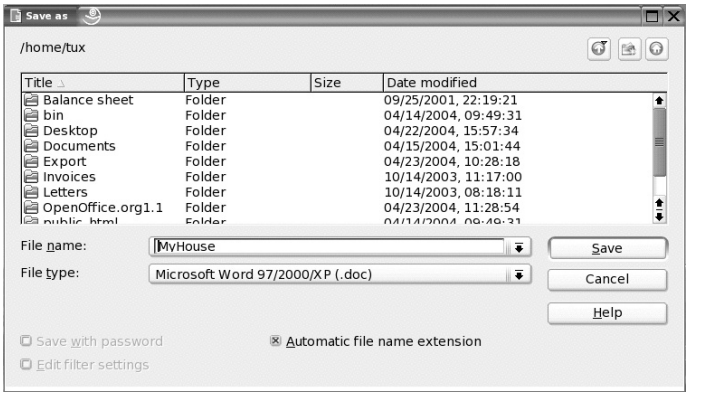


Figure 6.4: Saving a Document in Microsoft Word Format

Different Office suites are built for different target user groups, so the handling and functionality details are different. Thus, if you have a Microsoft Word document that uses a lot of Microsoft Word-specific features, such extended features may not be well translated into the OpenOffice text processor. The same is true for other Office components and, of course, works in both directions.

Later in this chapter, you will use your own Microsoft Office documents in an exercise to see how well they are imported into OpenOffice.org.

Note! With OpenOffice, you can create a PDF file directly. In every component, you can select `File` → `Export as PDF...`. You can also select a standard icon in the menu bar to export the current documents directly as PDF. This is a very convenient way to share data with others using an application-independent format. PDF readers are available free of charge on virtually any computer system. Your SUSE Linux system has two PDF interpreters installed by default; one of them is the Acrobat Reader, which is also popular on Microsoft Windows systems.

6.4 Working Together

It is easy to combine the different parts of OpenOffice.org as it is with other, commercial Office suites. If you want to insert a table into a text document, you can mark the cells, select `Copy` from the `Edit` menu, switch to the text document and select `Edit` → `Paste`. This method works for all OpenOffice.org components.

If you want to copy information from non-OpenOffice.org programs into an OpenOffice.org component, the easiest way to do so is to use Klipper. Just highlight the components in the source document and middle-click in the OpenOffice target document.

Note! By pressing the (Prnt Scrn) key on your keyboard a screenshot is made and copied into the clipboard. You can insert it into an OpenOffice document by selecting `Edit` → `Paste`. An image saved to a file can be inserted by selecting `Insert` → `Graphics...`

6.5 How to Configure OpenOffice.org

You can configure OpenOffice.org for your individual needs. The configuration dialog can be opened with `Tools` → `Options...`.

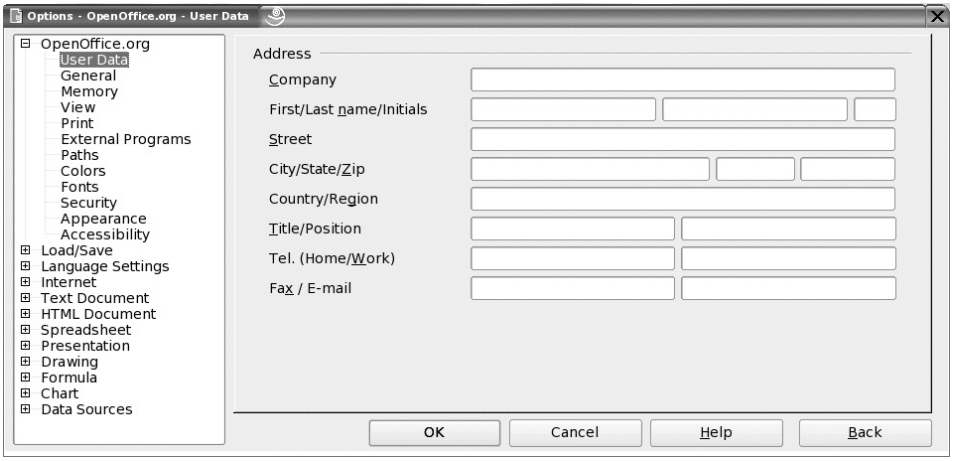


Figure 6.5: Configuration of OpenOffice.org

You can customize your OpenOffice.org application using the same options provided by other full-featured Office applications such as Microsoft Office. This kit cannot guide you through all of these options. However, you have most likely customized your Microsoft Office product. Based on that knowledge you should be able to customize OpenOffice to meet your needs and preferences.

6.6 How to get Help for OpenOffice

6.6.1 Help Agent

OpenOffice.org features a context-sensitive help function. Certain actions activate the Help Agent in the lower right corner of the application. You can also double-click the image of a lit light bulb to start the help system, which then provides the relevant help.

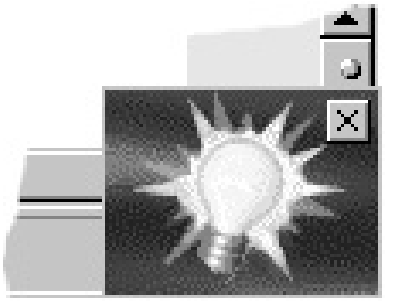


Figure 6.6: The Help Agent Offers Assistance

6.6.2 Online Help

You can request information about a certain topic manually from the help system with `Help` → `Contents`. The help text is displayed in the right-hand frame. The help pages are cross-referenced with links, just like web pages. The left-hand frame offers four tabs for finding information about the topic of interest:

`Contents:` This tab features a table of contents with all the chapters available for help.

`Index:` This tab features keywords like an index of a book. A search function helps you find a keyword.

`Find:` This tab lets you search the contents of all help chapters for specified terms.

`Bookmarks:` Use the icon to the far right to mark interesting help pages with a bookmark. The tab `Bookmarks` lists all previously set bookmarks.

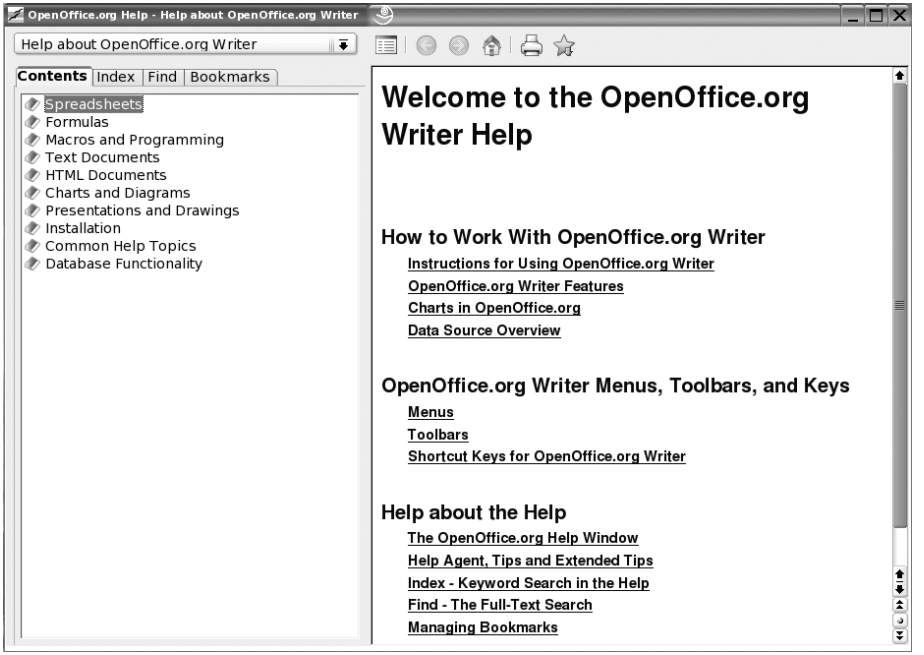


Figure 6.7: OpenOffice.org Help

Exercise: OpenOffice

1. Start OpenOffice.org with a single mouse click on the OpenOffice icon on the desktop.
2. The OpenOffice window appears. You can close this OpenOffice wrapper window.
3. The OpenOffice Word Processor starts up.
4. Write a short text using the OpenOffice Word Processor.
5. Select `File` → `Save As...`.
6. Open the directory `Documents` in the `Save as` window with a double-click.

7. To save your text in the Microsoft Word format, enter the file name `FirstDoc` in the textbox `File name` and choose `Microsoft Word 97/2000/XP` in the menu `File type`.
8. Still in the word processor, use `File` → `Open` to open the Microsoft Word document you saved to your filesystem earlier.
9. Review your Microsoft Word document in OpenOffice Word.
10. In OpenOffice use the `File` → `Open` dialog to open the Microsoft Office spreadsheet you copied earlier to your filesystem.
11. Check out your spreadsheet and its functionality in OpenOffice Calc.
12. Close all OpenOffice applications.

Summary

- You have customized OpenOffice on your Linux system for your convenience.
- You have created a simple OpenOffice document and stored it on your file system.
- You checked your Microsoft Office documents when launched in OpenOffice.

7 Optimize Office Communication and Collaboration

Objectives

After you complete this chapter, you should be able to do the following:

- Describe the SUSE LINUX 9.1 Personal modules for office communication and collaboration.
- Customize KMail and KOrganizer on your Linux System to fit your personal needs.

7.1 Integrated Solution

Groupware is getting more and more important in daily tasks associated with running a business. KDE ships with all the tools you need for communicating clearly and organizing your work. You can start all the different tools standalone or you can use them through the Kontact integration program. To start Kontact, select `Office` → `Kontact` in the KDE menu.

Figure 7.1: Kontact Integrates Office Tools

Exercise: Kontact

1. Launch Kontact by selecting KDE menu → `Office` → `Kontact`.
2. Close the `Tip of the Day` by clicking the `Close` Button.
3. Click on the different components of Kontact in the left pane. The single components are described in the remainder of this chapter. You can use all of them from within this integration tool.
4. Close Kontact.

7.2 Handling Email with KMail

7.2.1 Visual Orientation

If you do not want to start KMail over Kontact, you can click the icon on the KDE panel or select `Internet` → `E-Mail` → `KMail` in the KDE menu.

Figure 7.2: The Icon for Starting KMail

The left frame of KMail, shown in Figure 7.3 on the next page, displays the available e-mail folders (`inbox`, `outbox`, `sent-mail`, `trash`, and `drafts`). The selected folder is shown in the right frame. The upper half lists all messages contained in the corresponding folder. You can select a

message from this list with the mouse. The content of the selected message will be displayed in the lower half of the window.

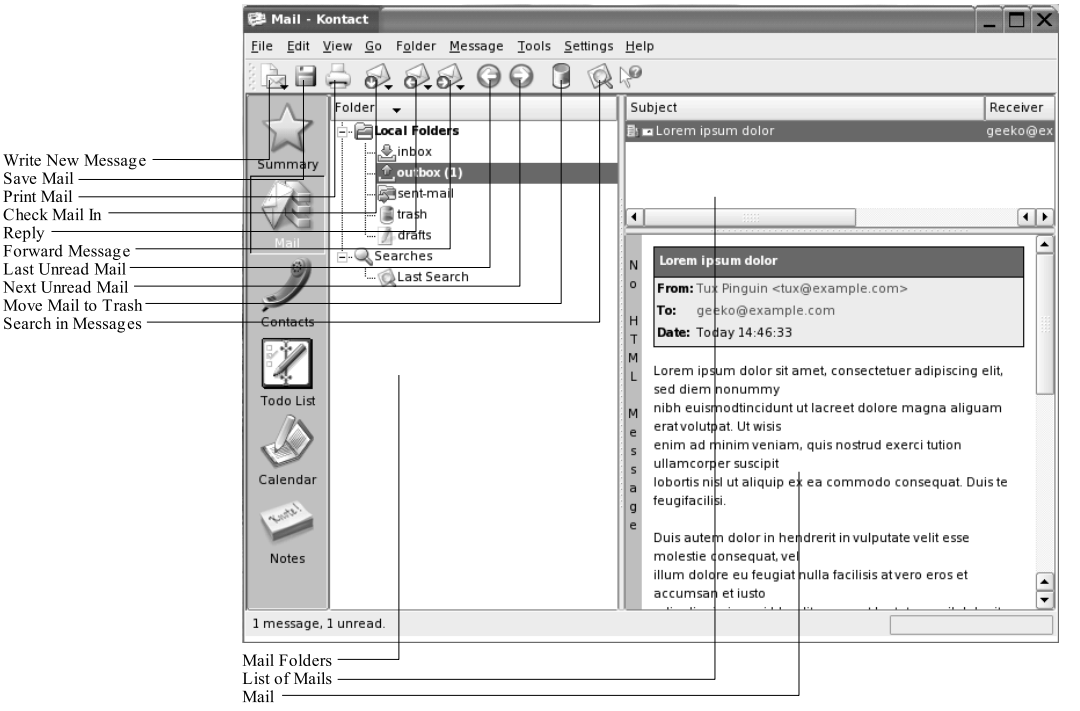


Figure 7.3: The KMail Window

7.2.2 Configuring KMail

You must configure KMail the first time you use it. Select the `Configure KMail...` option from the `Settings` menu and the configuration tool starts (see Fig. 7.4 on the facing page).

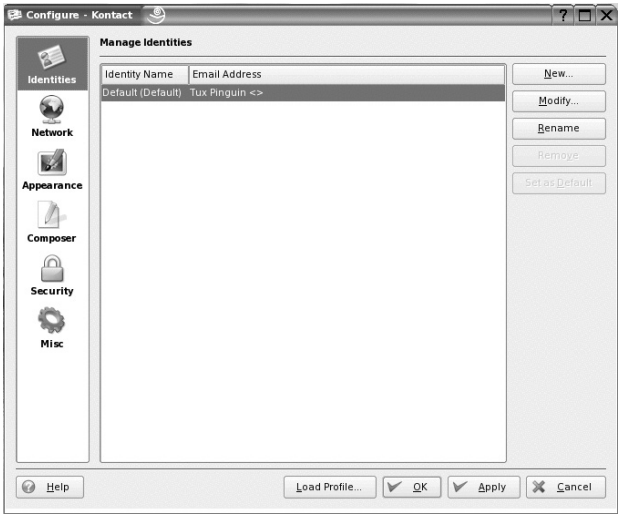


Figure 7.4: Configure KMail

In the first dialog you have to configure your identity. To change the settings of one identity, select it and then click the `Modify...` button.

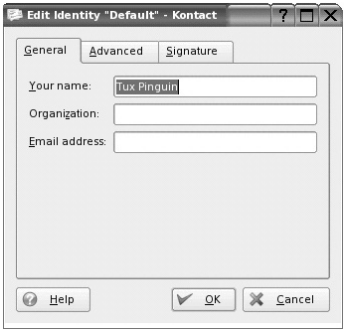


Figure 7.5: Enter Your Email Address

Here (see Fig. 7.5 on the page before) you have to enter your full name and your mail address. Press the `OK` button to go back to the configuration tool (see Fig. 7.4 on the preceding page).

Next, you need to enter the names of the servers for incoming and outgoing mail. To do so, select `Network`.

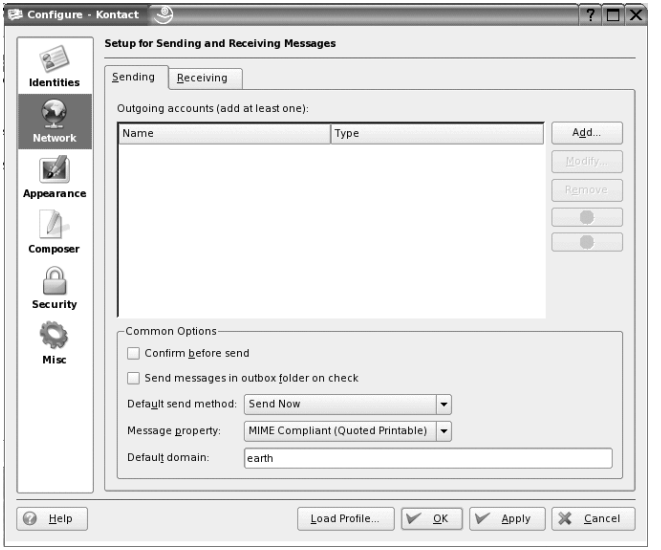


Figure 7.6: Server for Sending Email

The dialog includes two layers: `Sending` and `Receiving`.

You need to apply the Internet Mail settings from your network administrator or your Internet Service Provider.

Choose which type of transport you want to use:

`SMTP` You can configure the details of your mail servers manually.

`Sendmail` You can apply the settings if your workstation works already as a mail server. On SUSE systems, Postfix is used instead of Sendmail. Choose this if your workstation is not connected to a network.

In most cases you will select SMTP here, based on the settings from your network administrator or Internet Service Provider.

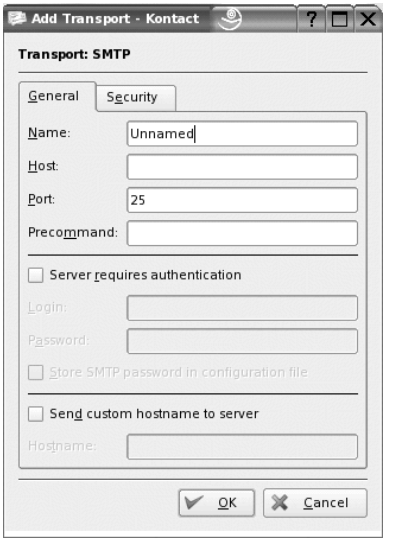


Figure 7.7: Account Information for Sending Email

In the following dialog (see Fig. 7.7) you can enter the settings of your server for sending e-mail. You have to

- Enter a description for the server (Name)
- Enter the real name of the server Host
- Specify if the server requires authentication:
  - Your login name (Login)
  - Your password Password

Click the OK button to close the dialog.

Next, you need to provide the server configuration for incoming e-mail. The procedure is nearly the same. First, activate the `Receiving` tab in the configuration tool (see Fig: > 7.6 on page 96). A blank list account appears (see > Fig: 7.8). To add a new entry, click the `Add...` button. Choose the appropriate settings for your account:

`Local mailbox` Select this if your workstation is working as a mail server or it is not connected to a network.

`POP3` Choose this if you want to access a POP3 mail server.

`IMAP` Choose this if you want to access an IMAP mail server.

`Disconnected IMAP` This is an experimental feature.

`Maildir mailbox` Choose this if your e-mail messages are already delivered to a mounted mail directory.

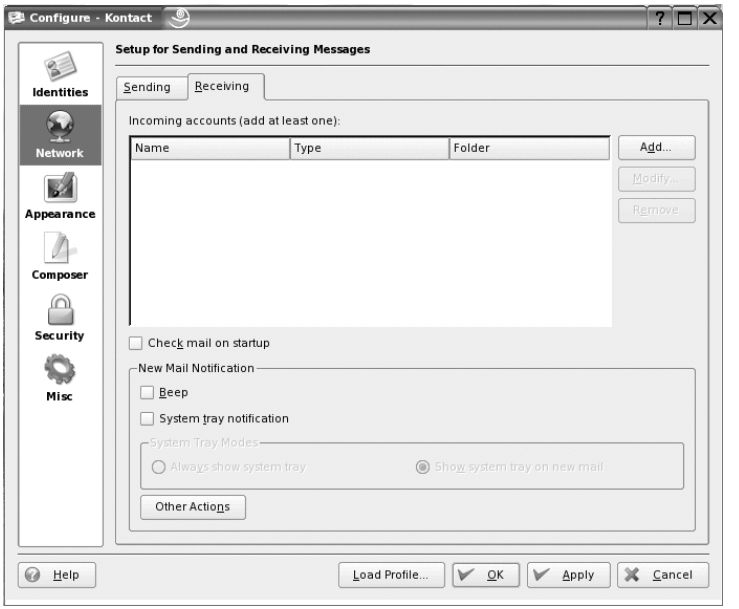


Figure 7.8: Server for Receiving Email

In most cases you have to choose between POP3 and IMAP. After pressing the OK button, you have to insert your account information. The dialogs for POP3 and IMAP accounts are slightly different. You can get these settings from your network administrator or your Internet Service Provider.

Figure 7.9: Information for a POP3 Account

7.2.3 Composing and Sending New Email

If the configuration of KMail is done, you can start writing messages. To write a new message, click the first icon (the white sheet of paper with the envelope) in the toolbar of KMail. A new window appears, as shown in Figure 7.10 on the following page. Enter the recipient's address, the subject, and the message body. Click the envelope icon with the green arrow to send the message (the first icon on the left).

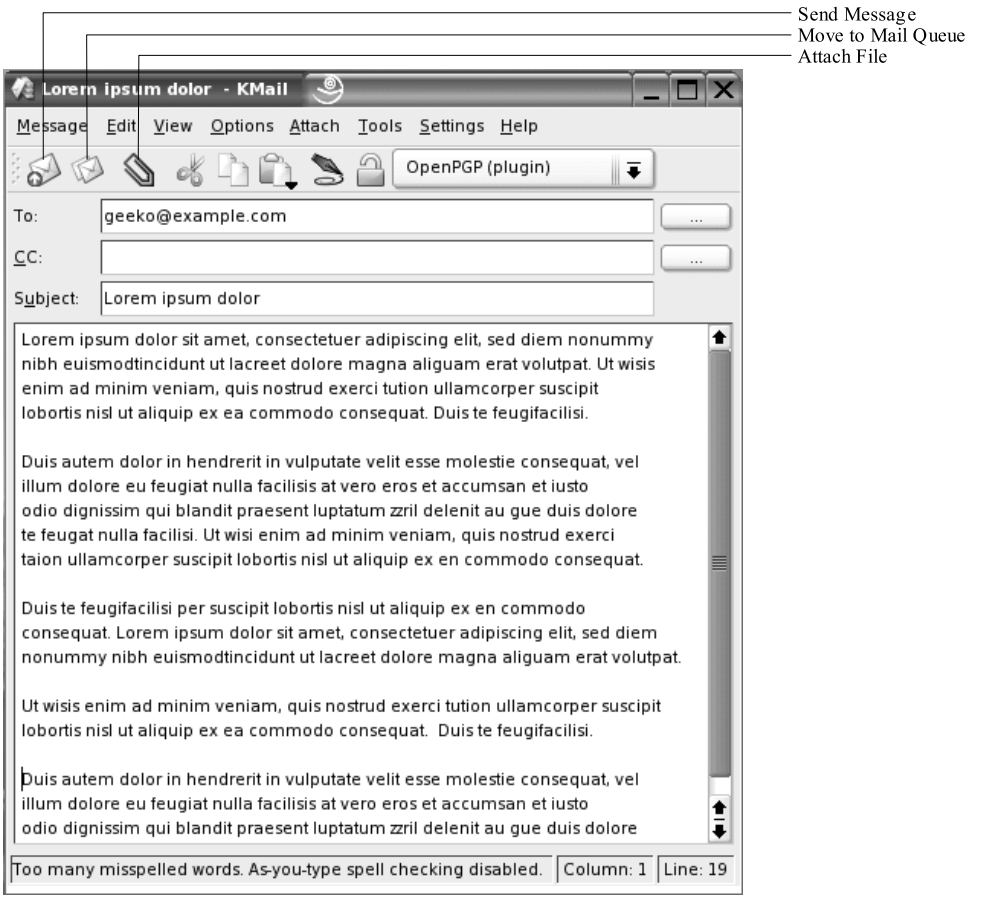


Figure 7.10: Composing a New Email

Note! You can write emails to an user of your local machine by using the mail address *login*`@localhost`. Therefor you do not need a connection to any network.

7.2.4 Replying to a Message

There are two ways of replying to a message: Clicking the icon with the envelope and the green arrow pointing left (see Figure 7.3 on page 94) opens the original message as quoted text for editing. The sender of the original message is automatically set as the recipient. The subject of the original address is also copied. This function can also be accessed from the menu: `Message` → `Reply...`.

7.2.5 Attachments

You can also send a file attached to the email message. To do this, click the paperclip icon in the toolbar of the window for composing the message (see Figure 7.10 on the facing page). In the dialog that opens, navigate through the directory tree and select the file you want to attach to the email message. Then click `OK`.

An attachment to a received email is marked with an icon at the bottom of the message body. When you click the icon, a dialog box appears asking whether the attachment should be opened with a specific application or saved as a file.

Exercise: KMail

In this exercise you will configure and use Kmail from within the Kontact application. This exercise assumes that you have gathered the needed information from your network administrator or your Internet Service Provider.

Proceed the following steps, if your computer is connected to a network:

1. Launch the Kontact application from the KDE menu by selecting `Office` → `Kontact`.
2. Start the KMail application by clicking the `Mail` icon in Kontact.
3. To configure KMail, select `Settings` → `Configure KMail...`.
4. Activate the `Default` Identity and click the `Modify...` button.
5. Type your email address in the `Email address` textbox and click `OK`.
6. Select `Network` in the left bar, activate the `Sending` tab, and click the `Add...` button.
7. Choose `SMTP` in the opened window and click the `OK` button.

8. Insert the access data for your mail server and click OK.
9. Activate the Receiving tab and click the Add... button.
10. Select the type of your post account type.
11. Insert the access data for your mail server and click OK.
12. Close the configuration window by clicking OK.
13. To write a new message, click the first icon (the white sheet of paper with envelope) in the toolbar of KMail.
14. Type the addressee in the To text field.
15. Type into the Subject text field the subject of your mail (e. g. My first mail with Linux).
16. Type the message.
17. Click the first icon on the left (envelope with the green arrow).

Proceed the following steps if your computer works as a stand alone machine:

1. Launch the Kontact application from the KDE menu with Office → Kontact.
2. Start the KMail application by clicking the Mail icon in Kontact.
3. To configure KMail select Settings → Configure KMail....
4. Activate the Default Identity and press the Modify... button.
5. Enter your tux@example.com into the Email address textbox and press OK.
6. Select Network in the left bar, activate the Sending tab and press the Add... button.
7. Choose Sendmail in the opened window and press the OK button.
8. Confirm the datas in the next dialog by pressing OK.
9. Activate the Receiving tab and press the Add... button.
10. Select the account type Local mailbox and press OK..
11. Insert Example Account into the textbox Name and press OK.
12. Close the configuration window by pressing OK.
13. To write a new message click the first icon (the white sheet of paper with envelope) in the toolbar of KMail.

14. Because you are not connected to any network enter `tux@localhost` into the `To` text field.
15. Type into the `Subject` text field `Test Mail to myself`.
16. Type a message.
17. Click on the first icon on the left (envelope with the green arrow).
18. To check for new mails, click the fourth icon (envelope with green down arrow).
19. Activate the `inbox` mail folder and select the new mail to read it.

7.3 Managing Contacts

The program to manage addresses and contacts is called Kaddressbook. The address book can be accessed in three ways:

1. by clicking `Contacts` in the left bar of Kontact, or
2. by selecting `Tools` → `Address Book...` or
3. `Office` → `Addressbook` from KMail.

You can add a new entry to the address book directly from KMail by right-clicking an e-mail address (for instance, in a message header) and then choosing `Add to Address Book` from the pop-up menu.

You can enter a search term in the `Search` input field. Then select the desired item from the results list.

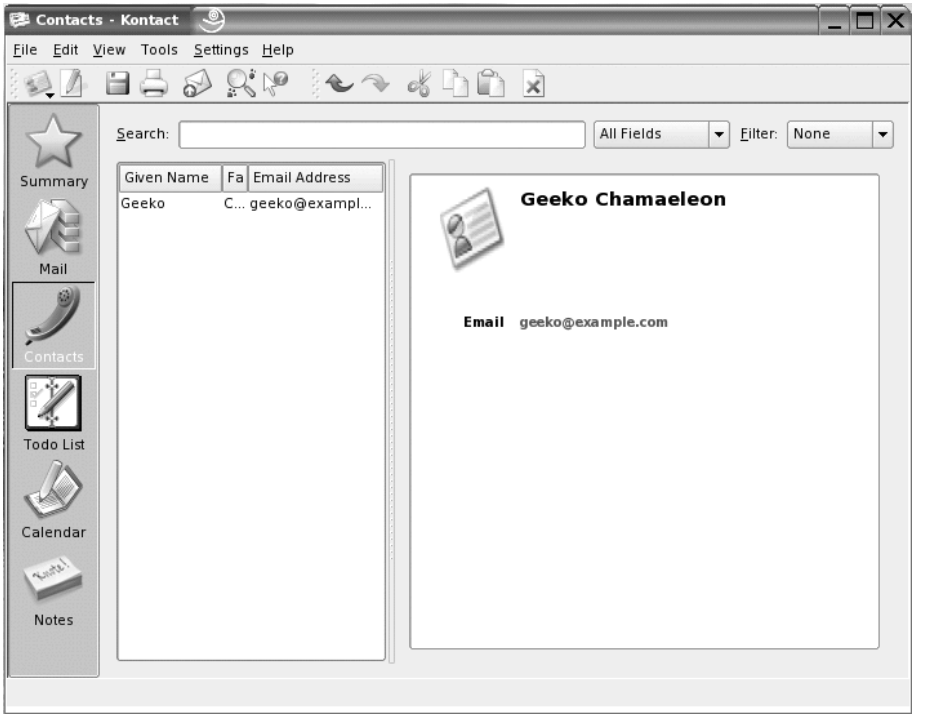


Figure 7.11: The Address Book for Managing Email Addresses

Create a new address entry by clicking the leftmost icon in the icon bar or by choosing `File` → `New Contact...`.

Click the envelope with the green arrow (in the toolbar; see Figure 7.11) to open a message composition window. The e-mail address marked in the address book will be inserted as recipient.

Figure 7.12: A New Entry in the Address Book

Exercise: The Address Book

1. Start Kaddressbook by clicking `Contacts` in the left bar of Kontact.
2. Add a new contact by clicking the leftmost icon at the icon bar.
3. Fill in the `Name` and `Email` fields and click `OK`.
4. Click the new contact you just created and send an e-mail directly.

7.4 Managing Appointments and To-Do Lists with KOrganizer

Linux offers a number of schedule organizers. KDE ships with its own scheduler, named KOrganizer.

Start KOrganizer from Kontact by clicking `Calendar` or by selecting `Office` → `Calendar` from the KDE menu. Kontact also displays a `Todo List` icon; this list is also included in the KOrganizer window (`To-do items`).

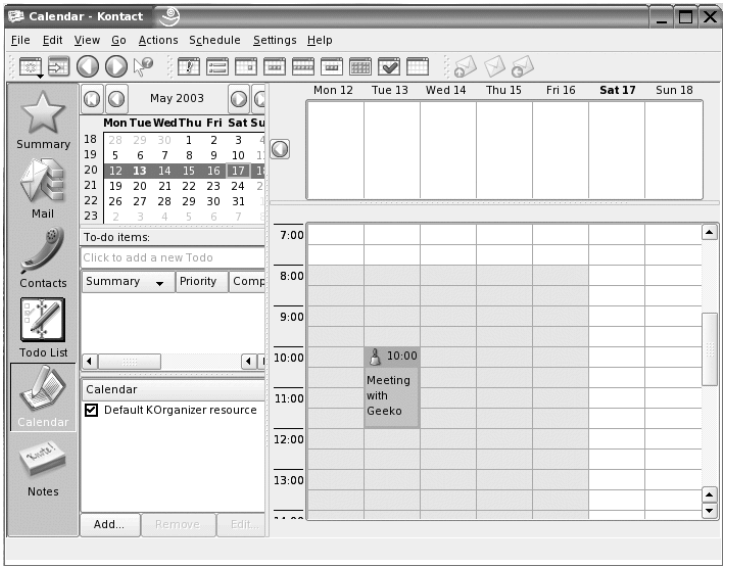


Figure 7.13: Keeping Track of Appointments with KOrganizer

The KOrganizer application window is divided into three frames (see Figure 7.13). A small overview of the current month is displayed in the upper left frame. The day marked blue is displayed in the large main frame on the right. The frame to the left and below the calendar is reserved for unfinished tasks.

7.4.1 Managing the Schedule

There are various different visualization options for the personal schedule: as a simple listing, by days, by weeks, by months, and so on. Using the mouse, select days in the monthly calendar. These will be displayed in the main frame.

Double-click the main frame of KOrganizer to open a window ready for input about an event. The window has fields for beginning, end, description, and other details regarding the scheduled event. By default, the time on which the mouse was clicked is used as the beginning time for the scheduled event.

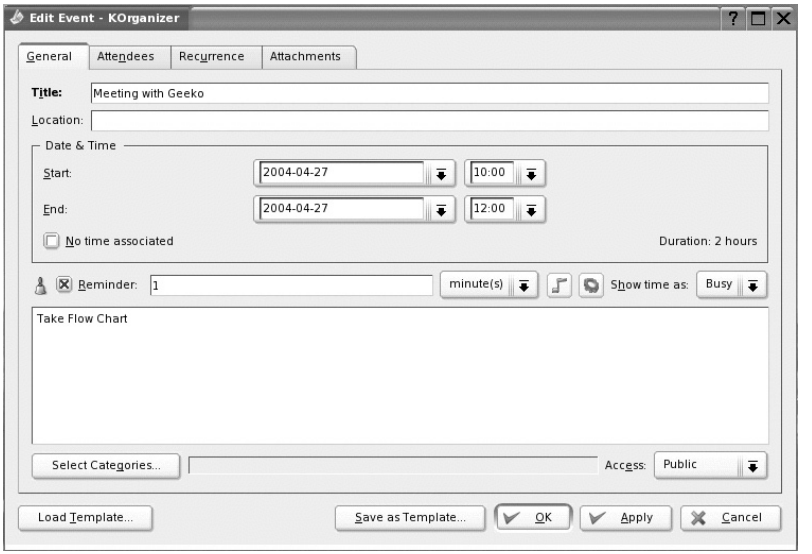


Figure 7.14: Creating a New Schedule Entry

7.4.2 Managing Tasks

KOrganizer also helps organize to-do lists. These are displayed in a list below the overview for the month. Enter new tasks by right-clicking anywhere on the white background of the list and choosing `New To-Do...` from the pop-up menu. A dialog for creating a new task appears .

7.4.3 Arming KOrganizer

KOrganizer needs to run in the background during regular operation to be able to ring an alarm for scheduled events. This is symbolized by an icon in the KDE panel. Clicking it restores the main application window.

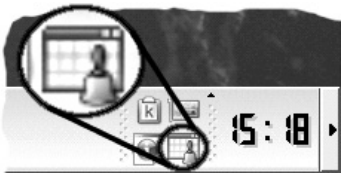


Figure 7.15: KOrganizer in the KDE Panel

Exercise: KOrganizer

1. Start KOrganizer by clicking on the `Calendar` icon in the left bar of Kontact.
2. Enter a new appointment by double-clicking the timetable.
3. Type a title for the appointment in the `Title` textfield.
4. Adjust the values for start time and end time.
5. Click the `OK` button.
6. Insert a To-do item by right-clicking in the list below the overview for the month.
7. Select `New To-Do...`.
8. Type a title for the To-do item in the `Title` text field.

7.5 Yellow Notes

Of course you are familiar the yellow sticky notes being stuck to many desktops and computer screens. With Kontact you can create virtual sticky notes and glue them on your Linux desktop.

To do so, select `Notes` in the left bar of Kontact.

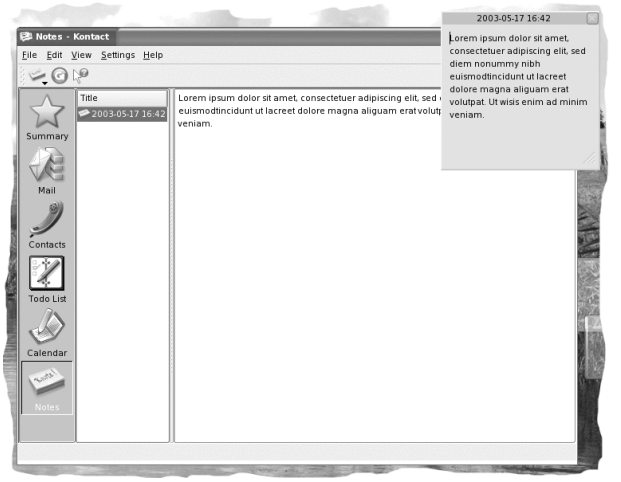


Figure 7.16: Yellow Notes at the Desktop

To create a new note, just click on the leftmost icon of the icon bar. Insert the text for the note into the large text area on the right. You can continue adding information by creating another note or you can create a new note by clicking the blue reload button, which is next to the button for creating a new note.

By default the title of the note consists of the creation date and time. If you want to change it, click the title with the right mouse button and select `Rename`.

Summary

- You can use the Linux collaboration tools, such as e-mail, contacts, appointments, tasks, and notes, with your standard network services or with your Internet Services Provider.
- You can access all collaboration tools from within the Kontact framework.

8 Manage Graphics

Objectives

After you complete this chapter, you should be able to do the following:

- Create a screenshot from your Linux desktop and paste it to a OpenOffice Writer document.
- Create a vector graphic using OpenOffice Draw, save it to a file, and import that file to an OpenOffice Writer document.
- Manipulate a pixel graphic with Gimp, save the graphic to a file, and import that file to an OpenOffice Writer document.

8.1 Create a Screenshot to Be Used with OpenOffice Writer

8.1.1 Create a Screenshot

You can quickly create a screenshot to be pasted into documents by using the Print key on your keyboard. However, this technique is limited because you do not generate a file with your screenshot. To save the screenshot to a file, you need to launch a pixel graphic program such as Gimp, paste the screenshot there, and then save it to a file. Another limitation is that you cannot control the scope of your screenshot.

The KSnapshot application gives you more control over the screenshots you create. To launch KSnapshot from the KDE menu, select `Utilities` → `Desktop` → `KSnapshot`.

With KSnapshot you can choose to capture the whole screen, just the window under the cursor, or any rectangular region of the screen you select. You can send the screenshot directly to a printer or save it to your file system in one of the following formats:

- Portable Bitmap Image
- PCX Image
- X BitMap Image
- Truevision Targa Image
- PNG Image (This is the default format)
- Portable Pixmap File Format
- JPEG Image
- X PixMap Image
- Encapsulated Postscript Image
- BMP Image

Exercise: KSnapshot

1. Select a virtual desktop and minimize all windows on that screen.
2. Launch KSnapshot from the KDE menu by selecting `Utilities` → `Desktop` → `KSnapshot`.
3. From the drop-down list box `Capture mode:`, select `region`.
4. Click the `New Snapshot` button. The KSnapshot window becomes invisible and your cursor changes to a cross.
5. Select the area of your screen displaying the `My Desktop` icon. The KSnapshot window reappears with a preview of the area you captured.
6. Click the `Save As` button and save the screenshot with the default name and format (`snapshot1.png`) in your Documents folder.
7. Click the `Quit` button to exit KSnapshot.
8. Launch OpenOffice Writer from the KDE menu by selecting `Office` → `Wordprocessor` → `OpenOffice.org Writer`.
9. Type 'This is my first imported screenshot' and press Enter to get a new line.
10. Select `Insert` → `Graphics` → `From File`.
11. Navigate to your Documents directory (/home/tux/Documents) and select the `snapshot1.png` file.
12. Click `Open` to import the file with an anchor at the current cursor position.
13. Save your document in your `Documents` directory with the name `KSnapshot-exercise.sxw`.

8.2 Create a Drawing with OpenOffice Draw and Use It in OpenOffice Writer

8.2.1 Create a Drawing

You can launch OpenOffice.org Draw from the KDE menu using `Graphics` → `Vector drawing` or from any running OpenOffice.org application using `File` *rightarrow* `New` → `Drawing`.

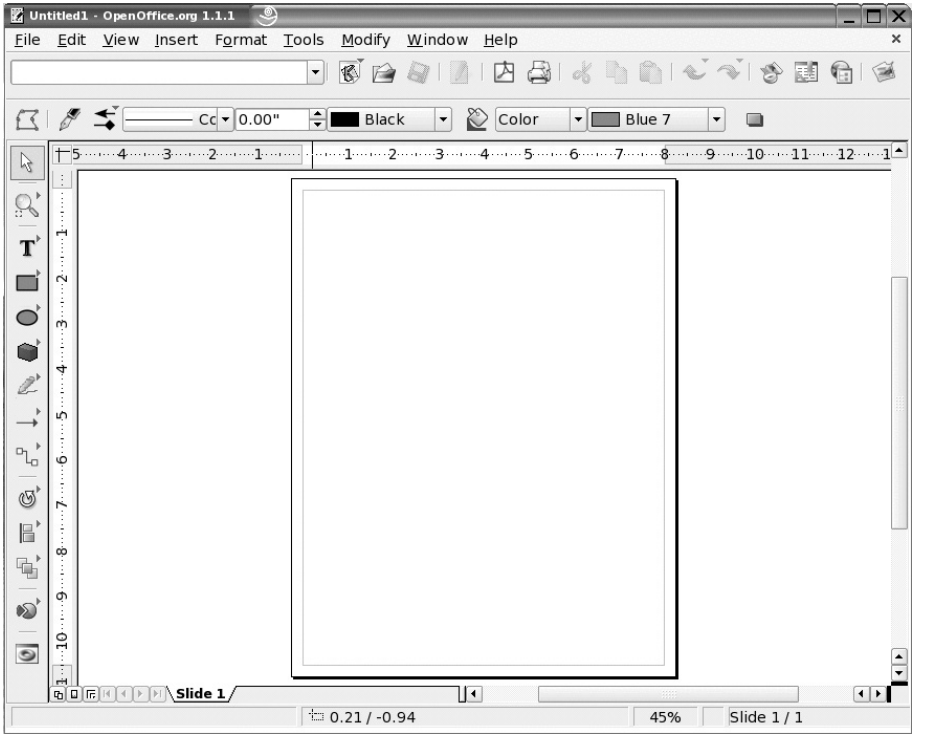


Figure 8.1: The OpenOffice.org Draw Main Window

You can see the main tool bar for OpenOffice.org Draw on the left side of the window. Most of the icons in the tool bar display a small blue arrow. The arrow indicates that more tools are available. To select a hidden tool, click the blue arrow and leave your mouse button pressed for one second.

Note! The "Connector" tool is a useful feature for charts. You can find it in the main tool bar. You can use the Connector to link two objects with a line. If you move one of the objects, the connection line moves as well.

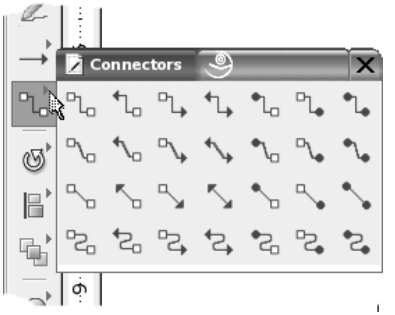


Figure 8.2: The Connector Tool

In this exercise you will create a new vector graphic with OpenOffice.org Draw, and copy and paste content between OpenOffice.org applications.

Exercise: OpenOffice.org Draw

1. Start OpenOffice.org by clicking the icon on the desktop.
2. Select `File` *rightarrow* `New` → `Drawing`.
3. Select the Rectangle tool and draw a small rectangle.
4. Select the Ellipse tool and draw a small ellipse.
5. Select the Connector tool and draw a connection line between the rectangle and the ellipse.
6. Select and move the rectangle around and view the connector lines following your movement.
7. Using `File` → `Save As...`, save the image as Draw file.
8. Open the `Documents`directory by double-clicking the icon.
9. Enter `MyFirstImage` in the `File name`text field.
10. Press the `Save` button.

11. Copy your image to a text document by selecting all objects with `Edit` → `Select All`.
12. Copy the marked objects to the clipboard by selecting `Edit` → `Copy`.
13. Create a new text document by selecting `File` → `New` → `Text Document`.
14. Insert the contents of the clipboard into the text document by selecting `Edit` → `Paste`.
15. Save the text document in OpenOffice format by selecting `File` → `Save As...`.
16. Open the directory `Documents` by double-clicking the icon.
17. Enter `TextWithImage` into the `File name` text field.
18. Press the `Save` button.

8.3 Processing Pixel Images with Gimp and Using Them in OpenOffice Writer

8.3.1 Basics

You can use Gimp, a free graphics application, to process scanned photos or images from the Internet. "Gimp" is an acronym for "'*GNU Image Manipulation Program*"'. The application is very powerful, but its handling requires some practice. You can start Gimp from the KDE menu → `Graphics` → `Image Editing`.

The main window in Gimp is named `The GIMP` (see Figure 8.3 on the next page). This window contains drawing tools, selection tools, retouching options, and a selection of colors, patterns, and brushes. Gimp also offers a variety of impressive effects. It is out of the scope of this kit to introduce all features of Gimp. However, the few examples given below will give you a quick introduction to discover Gimp. If you work with a lot of pixel graphics, you should take a closer look at Gimp.

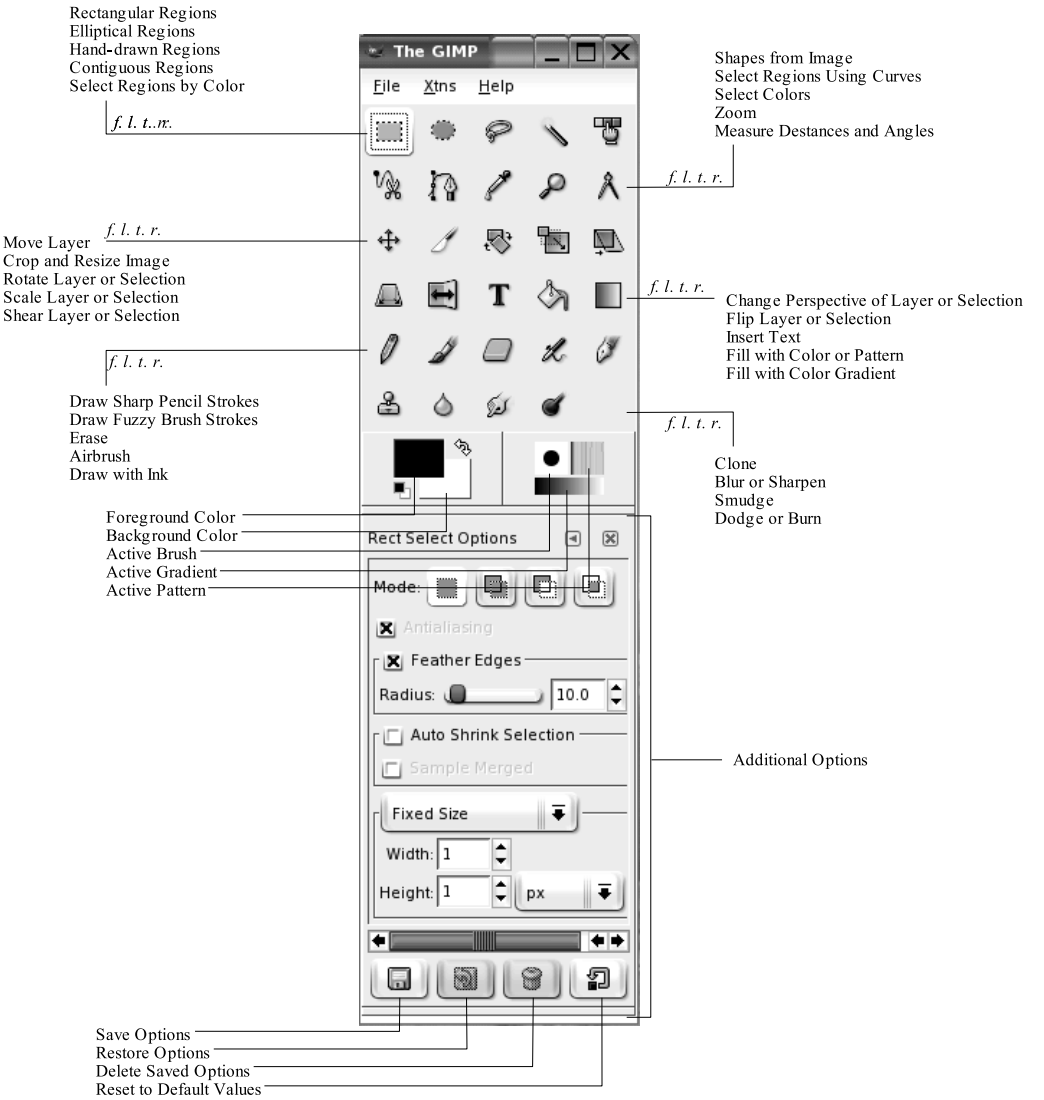


Figure 8.3: The Gimp Main Window

8.3.2 Opening and Saving

To open a file in Gimp, you must first choose `Open...` from the `File` menu. This opens a dialog from which you can select the file you want to open. The loaded image is displayed in a new window. Most functions of Gimp can be accessed by right-clicking the image. To save the image, you select `File` → `Save as...`. This option is available in the menu bar on top of every image window.

Figure 8.4: Right-Clicking Displays a Pop-Up Menu

8.3.3 Color Correction

Sometimes the colors of an image are not ideal. A picture might be discolored by flash overexposure or might have received an odd tint during the scanning process. In other cases, bad lighting might have led to underexposure. Gimp offers various options for postprocessing color correction. You can access the color correction options by right-clicking and then selecting `Layer` → `Colors`.

You can use the Brightness-Contrast... to darken bright images (Brightness) and brighten dark images, and you can make colors appear stronger by raising the value with Contrast. Figure 8.5 illustrates the difference between the original color in the upper left half of the image and the slightly darkened lower right half.

The Layer → Colors → Auto option offers you five proven color enhancement procedures to try. These procedures lead to variable results, depending on the source image, but trying these automatic procedures may be worthwhile. If the changes are not acceptable, you can undo them by right-clicking the image and then choosing → Edit → Undo or, alternatively, using the keyboard shortcut Ctrl Z.

Figure 8.5: The Effect of Brightness and Contrast

8.3.4 Masking Areas

Sometimes you might not want to modify the whole image, only part of it. This may be the case, for instance, with the “red eye" effect. You can use any of the six selection tools in the main toolbox in selecting an area for touchup (the technical term for this procedure is *masking*; see Figure 8.3 on page 117).

Because you need to create as accurate a mask as possible, you should first zoom in on the area you want to select using the magnifying glass tool (the third symbol from the right in the second row from the top). (See Figure 8.3 on page 117.)

The selection tools allow you to do the following:

Rectangular selection Select a rectangular area.

Elliptic selection Select a round or elliptical area.

Freehand selection Select an arbitrary area with the cursor.

Automatic fuzzy selection Click a low-contrast area to select it automatically. This tool is commonly known as the *magic wand* The scope of the magic wand can be adjusted by keeping the button pressed and moving the cursor.

Selection by color Select an area with similar colors.

Intelligent scissors This tool represents a combination of the magic wand and the path selection tool. Gimp tries to connect a number of given points automatically, based on the features of the image. The more points given, the more accurate the selection will be. Complete the selection by clicking inside the bounded area.

Bezier curve (path) selection tool Select an area by defining a path around it. You can round the corners of the selection by moving the cursor while holding down the mouse button. Complete the selection by clicking the initial point inside the marked area.

You can use the `Layer` → `Colors` → `Hue-Saturation...` option (found in the Context menu) to correct “red eye.” When only the iris of the subject is selected, the changes affect only the selected area, not the entire image.

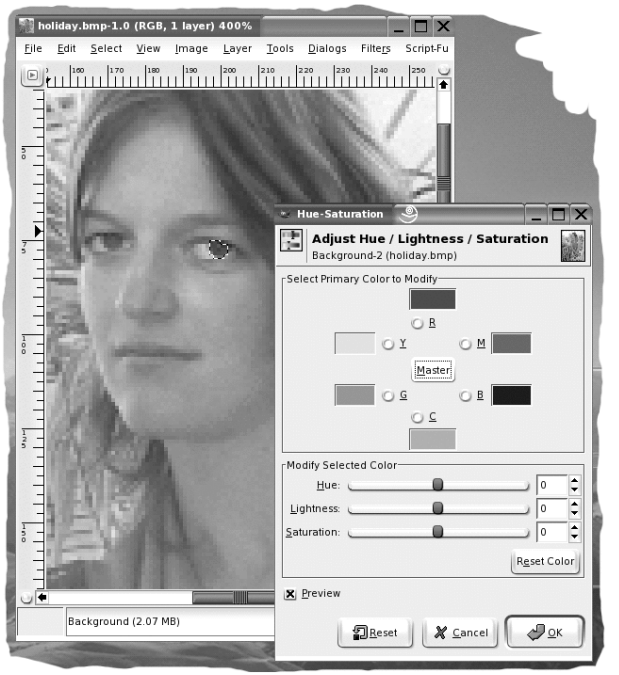


Figure 8.6: Color Correction on Eyes

8.3.5 special effects

Gimp provides several special effect tools. `Filters` offers a number of submenus, which contain various special effect functions.

Not all effects can be applied to all image modes. Some effects require a selection; some do not. Some only make sense when applied to a color image, some only when applied to black and white images. Many filters require a lot of processing power so you may have to wait for the results to be displayed on slower computers.

Figure 8.7: The Effect of the `Artistic` → `Cubism...` Filter

Exercise: Gimp

This exercise will guide you through a few Gimp features.

1. Copy the `/usr/share/wallpapers/suse9.1-default.png`file into your home directory ("∼").
2. Launch Gimp by selecting KDE menu → `Graphics` → `Image Editing`.
3. Before you can use Gimp, you need to configure it first. Click the `Continue` button five times.
4. Close the Welcome dialog by clicking the `Close` button.

5. Close the `Layers, Channels, Paths...` window by clicking the "X" button.
6. Open the image you have stored in your home directory by selecting `File` → `Open`.
7. Select the file name with your mouse and press the `OK` button.
8. Select the rectangular selection tool (on the left side of the first line) in the main window.
9. Select one of the rectangles in the window.
10. From the Image menu, select `Layer` → `Colors` → `Colorize`.
11. Change the `Hue` value to 320, the `Saturation` value to 90, and the `Lightness` value to `25`.
12. Press the `OK` button.
13. Delete the selection by choosing `Select` → `None` in the Image menu.
14. From the Image menu, select `Filters` → `Artistic` → `Cubism...`
15. Leave the default values untouched and press `OK`.
16. Save your image in your home directory by choosing `File` → `Save as...`.
17. Enter the filename `cubism.png` in the text field at the bottom of the Save dialog and press `OK`.
18. Leave the default values in the next window untouched and press `OK`.
19. Exit Gimp by selecting `File` → `Quit` in the menu of the main window.
20. Open a new OpenOffice Writer document and insert the pixel graphic you stored into that document. You can follow the steps outlined in the previous exercises and either insert the graphic using the `Insert` menu or copy and paste it.

Summary

- You can create a screenshot of your whole desktop or a specific area, save it to a file, and insert it into an OpenOffice.org document.
- You can create a vector graphic with OpenOffice.org Draw and use it in your document.
- You can manipulate a pixel graphic with Gimp and use the new picture in your document.

9 Web Browsing with Konqueror

Objectives

After you complete this chapter, you should be able to do the following:

- Describe the web browser features of Konqueror.
- Describe the concept of bookmarks, tabbed browsing, and Web shortcuts that make Web navigation with Konqueror easier.

9.1 Introduction

The KDE file manager Konqueror is not limited to displaying files and their content. It is also a professional-grade web browser (see Figure 9.1). You can click the earth globe icon on the KDE panel to start Konqueror with typical properties of web browsers.

Figure 9.1: Konqueror in Web Mode

As with other browsers, you can access a web site by entering its *URL* directly in the white input field at the top of the application window and then pressing (↵).

9.2 The Icon Bar

The icon bar displays a lot of icons. You should already recognize some icons because they are from Microsoft Internet Explorer or other common Web browsers. However, some of the icons are unique in Konqueror.

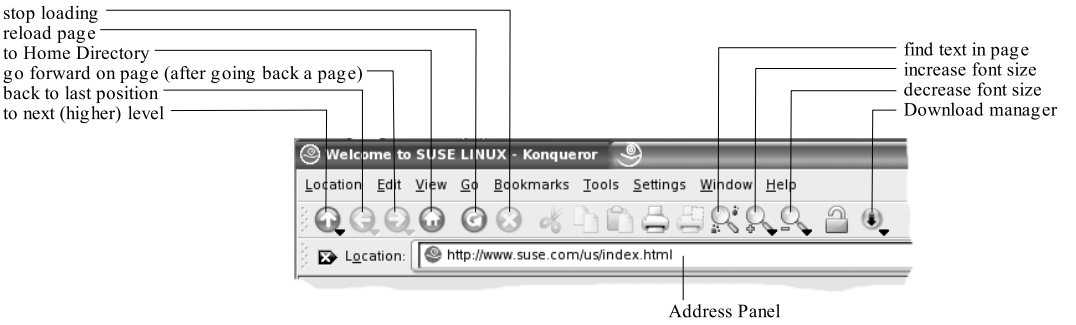


Figure 9.2: Navigation Icons of Konqueror

to next (higher) level Brings you from a subpage one level up (from `http://www.suse.com/us/business/` to `http://www.suse.com/us/`).

increase and decrease font size Changes the font size even if it is defined in the HTML code of the web page.

Download manager Helps you download full websites.

9.3 Bookmarks

9.3.1 Managing Bookmarks

You can bookmark web pages that you visit frequently. In `Bookmarks`, you find the following items:

- Add bookmarks
- Modify bookmarks
- Sort your bookmark collection
- Open bookmarked pages

By default the bookmark toolbar is not shown by Konqueror. You can activate the bar by `Settings` → `Toolbars` → `Show Bookmark Toolbar (Konqueror)`.

In the bookmark editor, you can easily sort the bookmarks by moving them with the mouse. You can access the bookmark editor with `Bookmarks` → `Edit Bookmarks` (see Figure 9.3 on the facing page).

To create a new bookmark folder, select the menu item `Insert` → `Create New Folder...`. To improve the clarity of the bookmark list, you can insert a separator with the menu item `Insert` → `Insert Separator`. Top-level bookmarks (directly under the `Bookmarks` folder) are displayed in the bookmark list in the main window of Konqueror and can be accessed with a single mouse click.

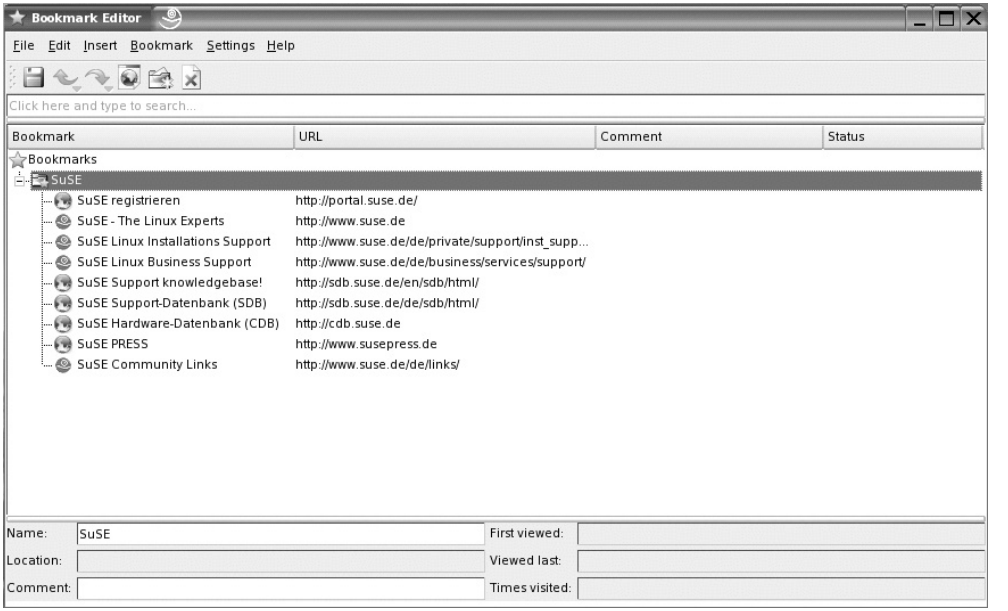


Figure 9.3: Managing Bookmarks in Konqueror

9.3.2 Importing Old Bookmarks

When you start using Konqueror as your new web browser, you may want to keep using your "old" bookmarks. Virtually all web browsers offer the option to save the bookmarks to a file (for example, to a floppy disk). Bookmarks saved in this way can be imported in the Konqueror bookmark editor with the menu `File` → `Import`.

9.4 Tabbed Browsing

An interesting feature you may know from the commercial web browser Opera or from Mozilla/Netscape is "tabbed browsing." You can open new web pages on different tabs instead of in different windows.

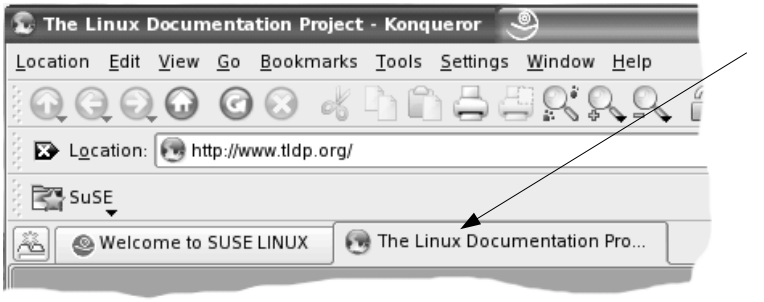


Figure 9.4: Tabbed Browsing with Konqueror

Enter a new URL in the address panel and hold down Ctrl while pressing ↵. The new page will be opened in a new tab. In addition, if you click on a link and press Ctrl simultaneously, the linked page will also be opened in a new tab.

To open a blank new tab, press Ctrl + T.

Click on the icon at the right of the tab panel to close the active tab.

9.5 Web Shortcuts

The *web shortcuts* provided by Konqueror are very comfortable. They allow you to query a search engine or another Internet information service directly from the URL bar.

Examples:

1. Enter `gg:kde` in the URL bar to enable direct access to the results of the Internet search engine Google for the search term “KDE”. Separate multiple search terms with spaces.
2. Enter `leo:konqueror` to directly quey the *LEO* English dictionary for the meaning of the term *konqueror*.

You can see a list of possible shortcuts in the `Web Shortcuts` window of the `Settings` → `Configure Konqueror...` menu. The list can easily be customized to your needs.

9.6 How to Configure Konqueror

The configuration dialog for Konqueror (see Fig. 9.5) can be found in the `Settings` → `Configure Konqueror...` menu.

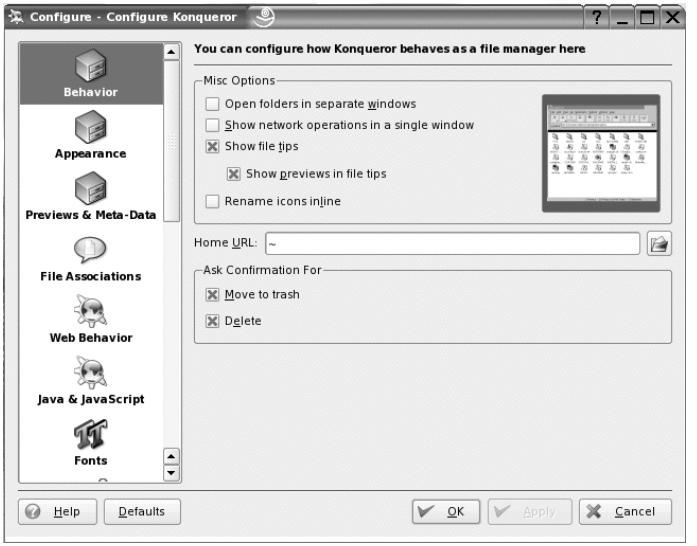


Figure 9.5: Configuration Dialog of Konqueror

Because Konqueror is both a Web browser and a file manager, some options are used for both functions. For example, when you configure the home page (`Behavior` → `Home URL`), you are configuring the start page for Konqueror as Web browser and for Konqueror as file manager.

Exercise: Konqueror as Web Browser

This exercise assumes that you have access to the Internet from your test machine.

Do the following steps if you have access to the internet:

1. Start Konqueror by clicking the icon in the KDE panel.

2. Activate the bookmark toolbar by selecting `Settings` → `Toolbars` → `Show Bookmark Toolbar (Konqueror)`.
3. Type `http://www.suse.com/` in the `Location` textfield.
4. Create a bookmark for this page by selecting `Bookmarks` → `Add Bookmark`.
5. Create in the same way four more bookmarks of your choice and add them to the bookmark folder.
6. Start the bookmark editor by selecting `Bookmarks` → `Edit Bookmarks`.
7. Create a new bookmark folder by selecting `Insert` → `Create New Folder...` in the bookmark editor.
8. Type in "My Bookmarks" as the name of the new folder and press the `OK` button.
9. Move your new bookmarks via drag and drop into the new folder.
10. Close the window of the bookmark editor.
11. Open a new tab with (Ctrl)(T).
12. Check how many pages the search engine *Google* finds when queried for "KDE" and "SUSE". To use web shortcuts type into the `Location` text field `gg:kde␣suse`.
13. Close the Konqueror window.

Do the following steps if you don't have access to the internet:

1. Start Konqueror by clicking the icon in the KDE panel.
2. Activate the bookmark toolbar by selecting `Settings` → `Toolbars` → `Show Bookmark Toolbar (Konqueror)`.
3. Type into the `Location` text field the following address: `/usr/share/doc/manual/suselinux-userguide_en/html/index.html`
4. Create a bookmark for this page by selecting `Bookmarks` → `Add Bookmark`.
5. Click with your left mouse button on the link `Legal Notice` while holding the (Ctrl) key pressed.
6. Activate the tab `Legal Notice`.
7. Create a bookmark for this page by selecting `Bookmarks` → `Add Bookmark`.
8. Start the bookmark editor by selecting `Bookmarks` → `Edit Bookmarks`.
9. Create a new bookmark folder by selecting `Insert` → `Create New Folder...` in the bookmark editor.

10. Type in “My Bookmarks” as the name of the new folder and press the `OK` button.
11. Move your new bookmarks via drag and drop into the new folder.
12. Close the window of the bookmark editor.
13. Close the Konqueror window.

Summary

- You can navigate on the Internet using the Konqueror Web browser.
- You can use Konqueror’s advanced features, such as tabbed browsing and Web shortcuts, to make Internet searches easier.
- You know where to find the configuration settings for Konqueror.

10 How to Print

Objectives

After you complete this chapter, you should be able to do the following:

- Describe the principles of the printing process in a Linux environment and print files on a local or networked printer.
- Control the printing process with an application such as KJobViewer.

10.1 Printing Files

Printing in a multiuser system can be challenging because several users can send print jobs to a printer at the same time. This is especially true in networked companies where many desktop computer users send their print jobs to a few centralized printers.

You will not face this kind of challenge if you work on a private workstation locally connected to a printer set up for your own personal use. Regardless of the situation, the Linux printing system is always the same. The Linux print system can handle a huge network with hundreds of desktop computers and centralized, networked printers as easily as it does a personal, standalone desktop with a directly connected printer.

To organize printing, several programs are placed between the user and the printer:

- From a printing dialog, the user selects a printer, determines the number of copies, and makes other settings.
- The *print daemon* receives the print job, places it in a queue, and successively sends print jobs from the queue to the printer.
- A series of utilities, such as the program KJobViewer, monitor printing. Print queues can be viewed and manipulated with KJobViewer.

Normally, one print queue is set up for each printer. However, it can be useful to have several print queues for the same printer. For example, you may want to set up different print queues for different print resolutions or, especially with color printers, for different print drivers (color or black-and-white). One physical printer can have more than one configured queue providing direct access to special printer functionality. The user dialog can list multiple print queues, each of which uses a different configuration setting even though all the queues are connected to the same printer. These basics, which at first look very complicated, ensure that a user can send print jobs at any time and not notice anything of the actual processing going on in the background. The print jobs are saved in the queue and successively processed by the print daemon – filtered and sent to the printer. The programs relevant to the user are explained below.

This document does not cover the detailed setup for printers or even network printing needs. It assumes that you had a printer available when you installed SUSE LINUX 9.1 Personal. This printer should have been detected and configured automatically by YaST. If you need special assistance or if your printer was not detected, you can refer to the appendix of this kit or to the SUSE LINUX 9.1 Personal documentation.

The rest of this chapter assumes that your printer has been detected and configured during system installation just as it would have been with a Microsoft Windows Installation.

10.2 The Print Dialog

If you click the Print button in an application or select File *rightarrow* Print from the menu, a dialog for print settings is displayed. The window that opens varies slightly from one application to another. Some applications ship with proprietary print dialogs. However, the most important settings are the same:

- Printer name
  Enter the printer (or the queue) to address. The system administrator defines the printer (queue) and its name. If this option is not specified, the default printer is used. You should see an entry such as HPDeskjet940C, depending on the printer that was detected and installed during the initial setup of SUSE LINUX 9.1 Personal.

- Number of copies
  Set the number of copies to print. If nothing is specified, one copy is printed.

- Page selection
  You do not always have to print all pages of a document. This option allows you to determine which pages to print (specify first and last page or a selection to print).

This dialog has the same appearance for all KDE applications. It is shown in Figure 10.1 on the following page. Access all possible preference settings by clicking the Expand button in the lower left corner.

The Print dialog is similar to the main print dialog you are familiar with in Microsoft Windows systems.

Another way of printing a file without first starting the program with which the file has been created is to move the file from your file manager, i.e., Konqueror, directly to the printer icon on the desktop or to the main window of the program KJobViewer, which shows the configured printer queues.

Of course, you can also print straight from the command line with very specific options, but this option is out of the scope of this study kit.

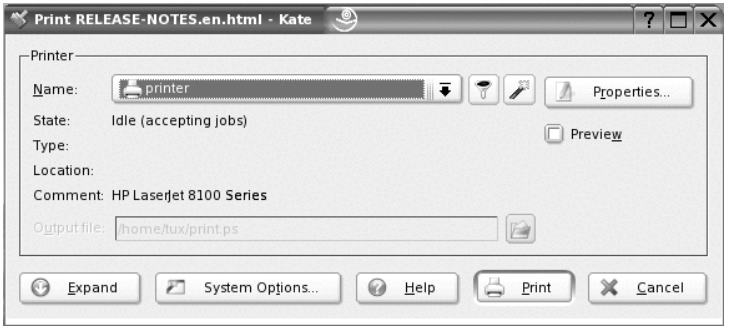


Figure 10.1: The `Print` Dialog

10.3 Displaying Print Jobs: KJobViewer

The KJobViewer program displays the status of print queues (see Figure 10.2). KJobViewer can be started from the KDE menu: → `Utilities` → `Printing` → `PrintJobs`.

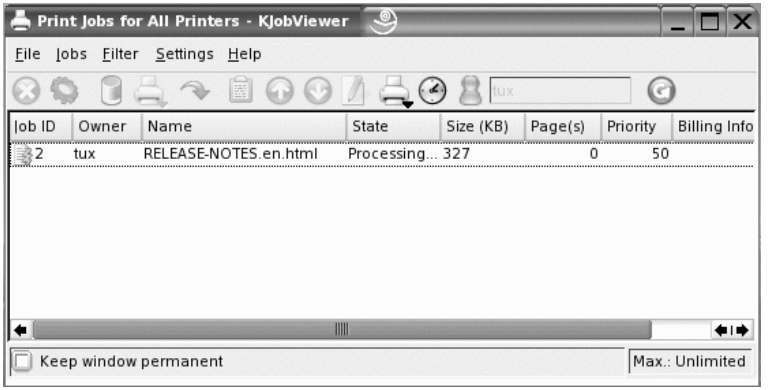


Figure 10.2: A Print Job Is Ready

First select the printer with the `Filter` → `Select Printer` menu. You get information about the following options:

- Rank of the job in the queue
- Number of the job
- Owner
- Name of the file
- Status of the printing job
- Size of the file

10.4 Deleting Print Jobs

With KJobViewer, print jobs that have not yet been processed can be deleted and the currently active job can be interrupted. In general, the user can only delete his own jobs.

To do this, select the print job in the main window of KJobViewer and click the trash can symbol in the icon bar. Alternatively, you can right-click the print job and select `Remove` from the menu.

Again, this print job administration is very similar to Microsoft Windows.

Exercise: Printing with Linux

This exercise guides you through the printing process. It assumes that you had a printer powered on and connected to your computer while you installed SUSE LINUX 9.1 Personal.

1. Launch Konqueror as file manager on an empty virtual desktop by clicking the blue house symbol in the KDE panel.
2. Ensure your printer is powered on.
3. Single-click the `Documents` folder in your Home directory.
4. Drag the `snapshot1.png` file you created earlier to the `Printer` icon on your desktop.

5. Check your printout. It should show the `My Computer` icon of your desktop.
6. Now, launch a new OpenOffice.org Writer document and type a few paragraphs of text.
7. Save your file in your `Documents` folder with a filename of `Printing-Excercise.sxw`.
8. Within the OpenOffice.org application, open the print dialog of OpenOffice.org by selecting `File` *rightarrow* `Print` .
9. Select your printer from the `Name` drop-down list.
10. Click the `OK` button to accept the default settings and initiate the printing process.
11. Check your printout to make sure it is what you expected.
12. Turn off your printer.
13. Move back to the OpenOffice document and redo the step to print the file to your printer.
14. You will, of course, not get a printout because your printer is turned off. On another free virtual desktop, click the `Printer` icon once to launch KJobViewer.
15. Right-click the print job and select `Hold` to hold the job.
16. Power on your printer. Depending on the printer's configuration, it might create a printout right after you turn it on.
17. Check the print job status in KJobViewer. The status of the print job should still be on `Held`.
18. Right-click the print job and select `Resume`. The print job you put on hold will be printed immediately.
19. This concludes the printing exercise. You may want to check the printouts from the Microsoft Office documents you copied to the Linux system.

Summary

- You can print files from the Linux system to your printer with and without special printing dialogs.
- You can use an application such as KJobViewer to control the print jobs in the printer queue.

11 Advanced Linux File System Techniques

Objectives

After you complete this chapter, you should be able to do the following:

- Describe how to back up or archive files on a SUSE LINUX system.
- Explain how the Network File System (NFS) shares data in a network.
- Understand how to use Microsoft shares via SAMBA on a Linux system to collaborate with Microsoft Windows services.
- Describe how to use Linux applications to burn CDs.

11.1 How to Archive Files with Ark

With the program Ark, You can collect multiple files or even entire directories into an archive. This can be very useful for

- backing up data or
- preparing data to be sent via floppy disk or e-mail.

One big advantage of using Ark to back up files is that the directory structure in an archive is recreated after unpacking.

You can start Ark from the KDE menu by selecting `Utilities` → `Archiving`.

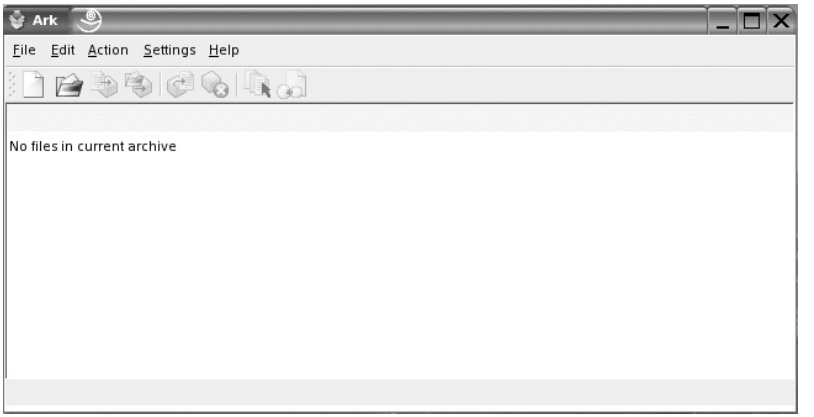


Figure 11.1: The User Interface of Ark

Before you can begin archiving files, you must first create a new archive. Select `File` → `New` to open a window in which to specify the path and name of the archive. The standard file format for archives in Linux is `.tar` [1]

[1] From *tape archiver*; originally this was developed for data backup on magnetic *tape*. Tar files can become quite large, but you can *compress* them at a later time. Ark carries out archiving and compressing in one step if you use `.tar.gz` as the file format. Ark can also handle the `.zip` format that is commonly used in Windows environments.

Ark supports file formats such as the following:

- Tar archives (`*.tar`, `*.tar.gz`, `*.tar.Z`, `*.tar.bz2`, etc.)
- Compressed files (`*.gz`, `*.bz`, `*.bz2`, `*.lzo`, `*.Z`)
- Zip archives (`*.zip`)
- Lha archives (`*.lzh`)
- Zoo archives (`*.zoo`)
- Rar archives (`*.rar`)
- Ar archives (`*.a`)

When you click `Save`, an empty archive is created at the given location. To fill the archive, drag the required files with the mouse from Konqueror into the white window. You can open an existing archive (whether it is compressed or not) either directly by clicking the file in Konqueror or by starting Ark and then selecting `File` → `Open...`. The contents of the archive are displayed with the program Ark. With the mouse, you can drag individual files from the archive window and place them in a Konqueror window. Alternatively, you can unpack the entire archive with `Action` → `Extract...`.

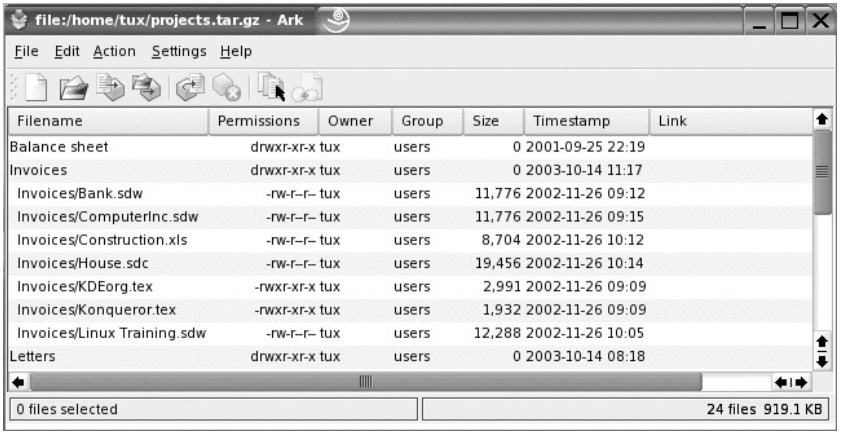


Figure 11.2: Ark Displays the Contents of an Archive

The following exercise will demonstrate that the standard archive format *.tar does not compress files in the archive.

Exercise: Archiving Files

1. On an empty virtual desktop, open Ark from the KDE menu by selecting `Utilities` → `Archiving` → `Ark`.
2. To create a new archive, `documents.tar`, which contains your own Documents directory, click `File`, `New`.
3. Select `Tar Archive` from the `Archive Format` drop-down list box.
4. Ensure you are in your home directory /home/tux; then enter `documents.tar` in the `Location` box.
5. Click the third button from the left or open a new Konqueror file manager.
6. Drag the Documents folder from your home directory to the Ark window.
7. Save and close the open windows.
8. Open a new Konqueror file manager by clicking the blue house symbol in the KDE panel.
9. How large is the archive you just created?
10. Now, create a compressed archive, `documents.tar.gz`, which also contains your own documents directory. Use steps similar to those above, but create an `Archive Format` of `Gzipped Tar Archive` with a name of `documents.tar.gz` in your home directory.
11. How large is the compressed archive?

11.2 How to Use the Network File System (NFS)

11.2.1 A Brief Description of the Network File System NFS

This section briefly introduces the *NFS (Network File System)*, which is widely used in the UNIX and Linux world. In an intranet, it is frequently useful to make data on one computer directly

accessible from other computers. For this purpose, the system administrator mounts the file systems of one computer on the file system of another one.

Example: If a user wants to run an application on a remote host using the data from the home directory on the local host, the data could first be transferred to the remote host. However, everything would be easier if the content of the home directory on the remote host matched the home directory on the local host. This is what NFS does: the actual home directory of the user on the local host is empty. The home directory on the remote host is mounted on the network (see Figure 11.3). In principle, the user does not know if the files with which he is working are located on his own computer or on a remote one.

Using NFS, it is now also possible to exchange data with other users. The computers must be connected to the network and the owners must allow access to the files and directories to be exchanged via file permissions.

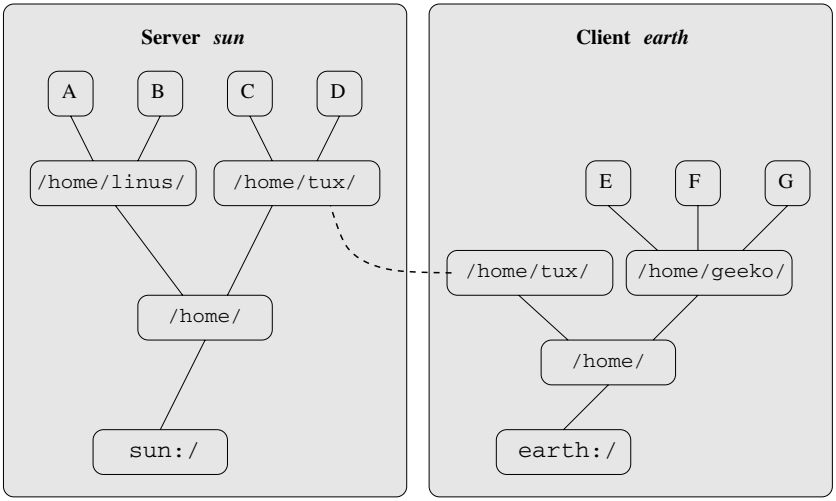


Figure 11.3: The Network File System

11.3 How to Use Windows Shares

11.3.1 Preliminary Note

In a Windows operating system, files and directories can be shared with other members in the network. The files made available for general use in the network are usually referred to as *shares*. Linux is also able to handle such shares.

But there are two constraints with the shipping code of SUSE LINUX 9.1 Personal:

1. Because there is a bug in the `samba-client` package, you have to make an online update before you can access Windows shares.

2. It is possible to access Windows shares with SUSE LINUX 9.1 Personal, but if you want to make one of your Linux directories available for the Windows users in your network, you must use the SUSE LINUX 9.1 Professional or you must download the additional “Samba” software.

11.3.2 Accessing Shares and Other Services

The network shares can be viewed and accessed in Konqueror. To do this, click the `Network Browsing` computer icon on the desktop.

When Konqueror is started, it displays a number of available services, including the `Windows Network` service (see Figure 11.4 on the next page).

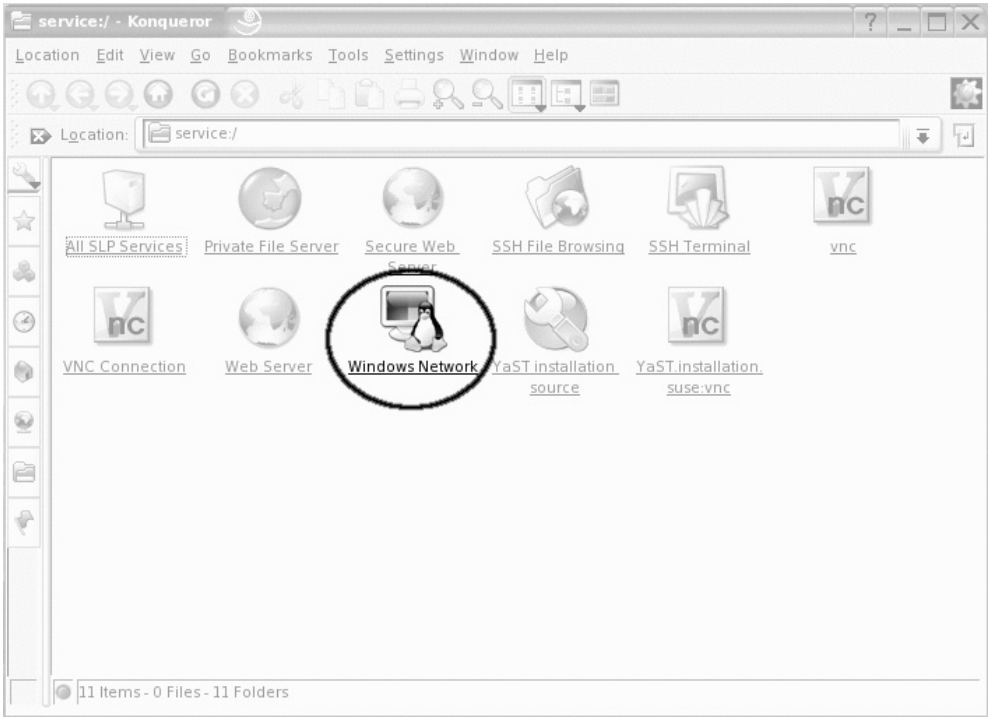


Figure 11.4: Services in the Local Network

Click this icon to display the workgroups available in the Windows network (see Fig. 11.5 on the following page)[2].

[2] if you get an `Internal Error` error message, you have to get the online update

Click a workgroup with the mouse in order to display the hosts in the workgroup. Hosts that are assigned a name are displayed with their names. Hosts without a name are displayed with their IP addresses.

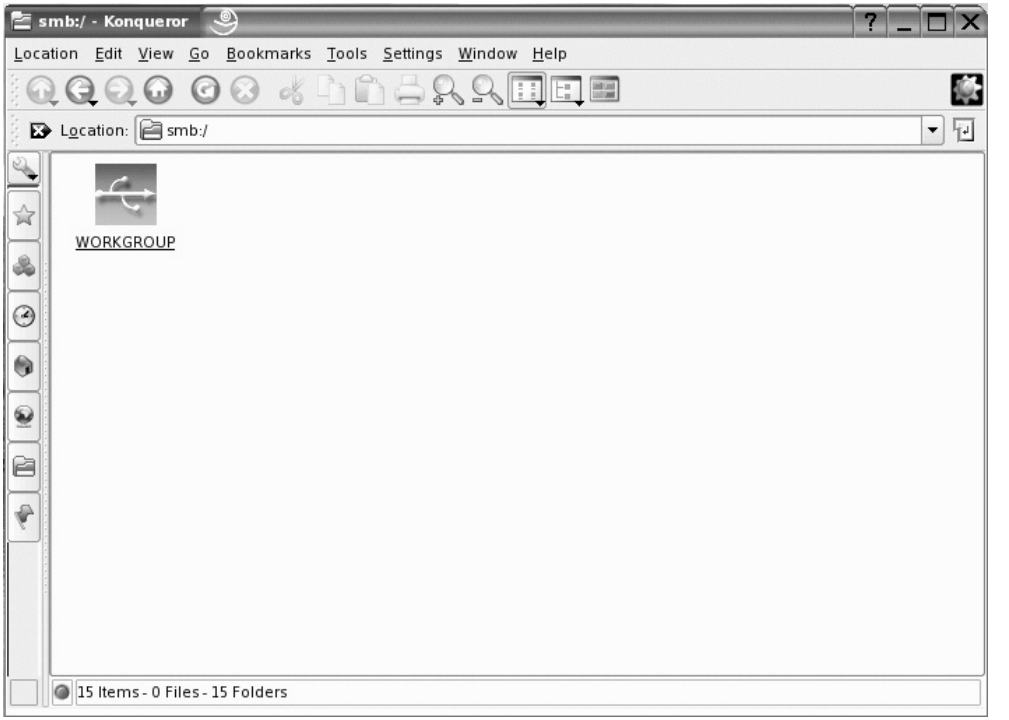


Figure 11.5: Workgroups in a Windows Network

Click a host icon to view the *shares* available on the host. If a user authentication is required for a share, Konqueror will query the login name and password before accessing the share.

11.4 How to Manage CDs

11.4.1 Starting K3B

The program for burning CDs is called K3B. You can find the entry in the KDE menu under `Multimedia` → `CD/DVD Burning`. The first time you start it, K3B asks you for the maximum speed of your CD recorder (see Fig. 11.6).

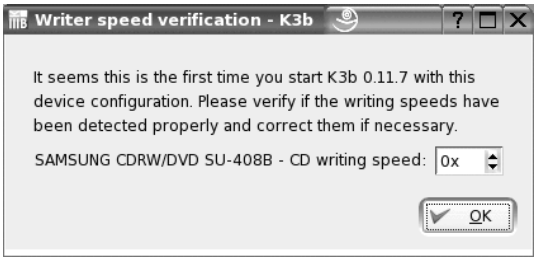


Figure 11.6: Configure K3B

K3B can work in four modes. The mode you use will depend on the type of project you are working on:

`New Audio CD Project` Create a new audio CD with music files.

`New Data CD Project` Create a data CD to store data files.

`New Data DVD Project` Create a data DVD to store data files.

`Copy CD...` Copy a CD.

The look and feel of the first three modes is very similar. The last mode starts an assistant that leads you through the copy process.

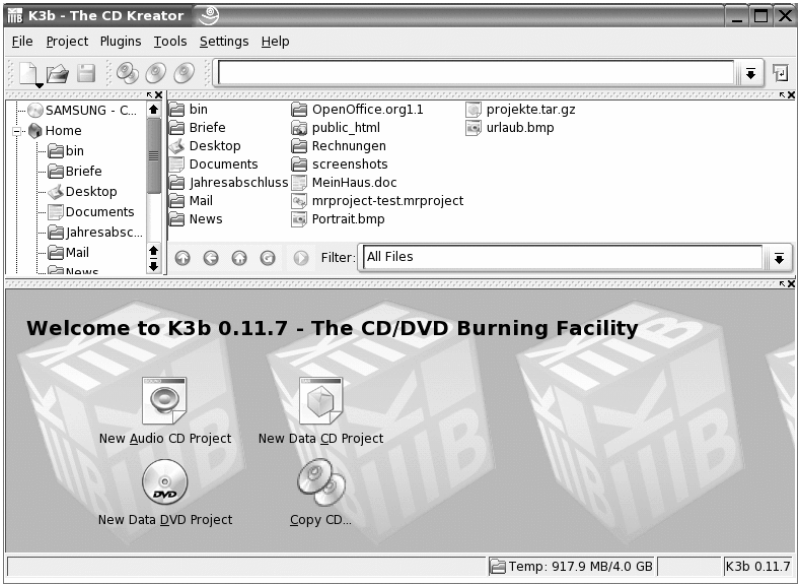


Figure 11.7: The K3B User Interface

11.4.2 Create a New CD

The two areas on the top of the window are used for navigating the file system. The area on the bottom shows you the content of the CD you will burn.

You can select a file or a directory from one of the top areas and drag it with the mouse into the bottom window area.

If you want to create an audio CD, choose the option to create a audio CD with your music files. By default, K3B can read the following formats:

- WAV
- Ogg Vorbis
- MP3

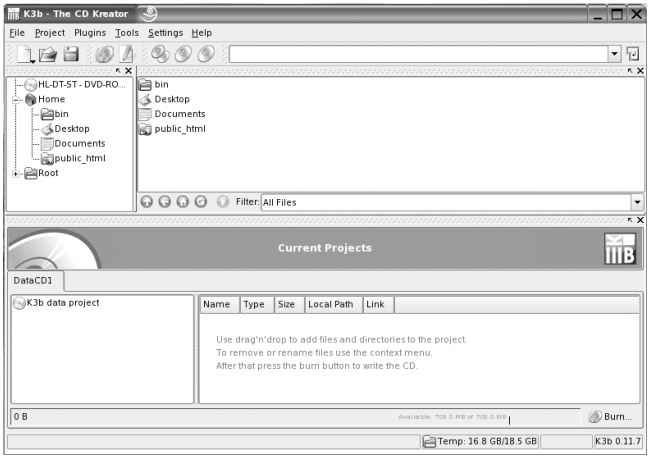


Figure 11.8: Creating a New Data CD

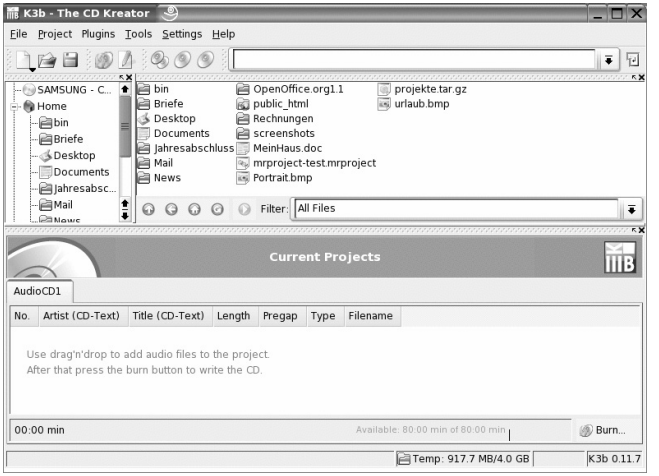


Figure 11.9: Creating a New Audio CD

After selecting your files, click the `Burn` button in the bottom right corner. A dialog appears that differs depending the kind of project (see Fig. 11.10), but the main options are equal.

Figure 11.10: The Burn Dialog for Creating a New Data CD

`Burning Device` Select your CD/DVD recorder.

`Writing Mode` Choose the writing mode. You can burn your entire disc at once (`DAO`), burn each track at individually (`TAO`), or burn raw data (`RAW`), or you can let K3B decide (`Auto`).

Option `Simulate` If you just want to test the burning process, select this option.

Option `On the fly` If you want to burn directly, without making a copy on the hard disk first, select this option.

Option `Burnfree` If your CD recorder supports a “burnfree” mode and you want to use it, select this option.

Option `Only create image` If you just want to create an ISO image on your hard disk without burning this image on a CD/DVD, select this option.

In most cases, you do not need to change anything and you can press the `Burn` button.

11.4.3 Copy a CD

If you choose `Copy CD...` in the main menu, you do not need to select the files you want to copy. The Burn dialog appears (see Fig. 11.11).

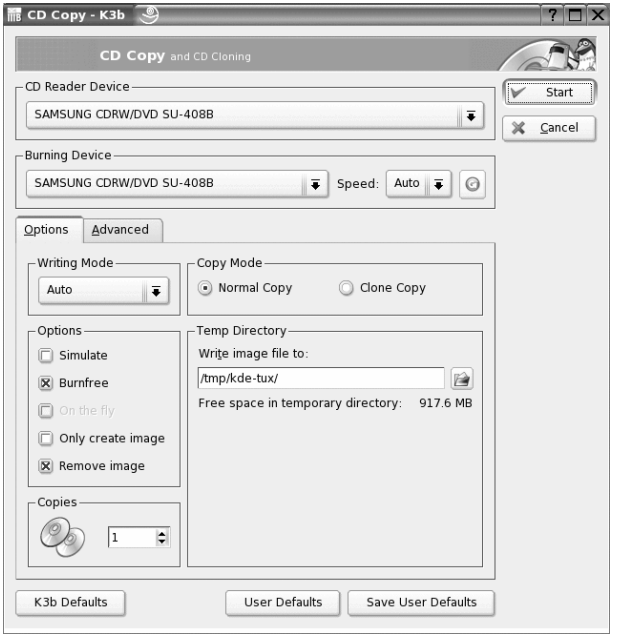


Figure 11.11: The Burn Dialog for Copying a CD

Here you have nearly the same configuration possibilities as described in section 11.4.2 on page 152. But you also have to select a `CD Reader Device` and a `Copy Mode`:

`Normal Copy` Copies the CD track by track.

`Clone Copy` Copies the CD byte by byte.

11.4.4 More Tools

Some more interesting features can be found in the `Tools` menu of the main window of K3B:

`CD` → **`Erase CD-RW...`** You can clear a rewriteable CD-RW.

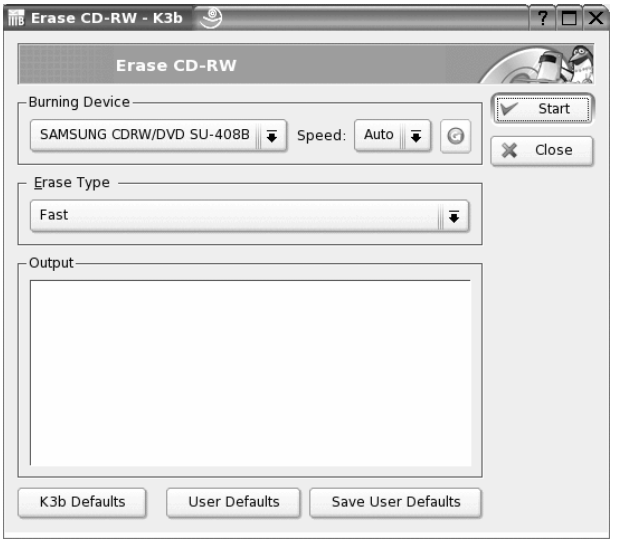


Figure 11.12: Clear a CD-RW

`CD` → **`Burn CD Image...`** Burn an ISO image (made with the `Only create image` option in the burn dialog or downloaded from the Internet) to CD.

DVD → **Copy DVD...** Copy a complete DVD.

DVD → **Format DVD-RW/DVD+RW...** Clear a rewriteable DVD-RW or DVD+RW.

DVD → **Burn DVD Image...** Burn an ISO image (made with the `Only create image` option in the burn dialog or downloaded from the Internet) to DVD.

Summary

We do not provide an exercise in this chapter because system configurations will vary among users of this kit. If your system, for instance, is networked with a Microsoft network infrastructure, you can check out the SAMBA functionality. If your machine is networked with a Novell network, you can check the NFS and SAMBA functionalities. If you have a CD or DVD writer, you can check out K3B to create CDs from your new SUSE LINUX 9.1 Personal machine.

For more information, you can refer to the extensive Linux documentation.

- You understand the archive formats of Linux and how to use them.
- You have a basic understanding of network file systems and how to use them from your Linux desktop system.
- You are familiar with the CD and DVD burning capacities of Linux.

12 Manage SUSE LINUX

Objectives

After you complete this chapter, you should be able to do the following:

- Explain when you need to use the *root* account to perform system adjustments.
- Describe how to work with processes on a Linux system to terminate misbehaving processes.
- Understand how to install new software on your system.

12.1 How to Use *root*

12.1.1 What *root* Is

If you have worked with Windows NT or Windows XP, you know that they both have a user called *administrator*. In Linux the administrator of the system is called *root* and he is allowed to do everything.

12.1.2 Describe When to Use *root*

You have to become *root* if you want to change important system settings. For example, you must be *root* to

- Configure server services
- Install or remove software
- Manage users and groups
- Change hardware configurations
- See system logs

Of course you can log in as *root* and work as though you were a normal user, but for security reasons it is not recommended. The fewer programs run with root permissions the better. And KDE, for starters, is already a large program.

Attention! We strongly recommend that you avoid always logging in to Linux as *root*. As a normal user, you do not have the permissions to delete important system files. Even if you are inattentive only briefly, as a normal user you could destroy only the files in your home directory; if you were logged in as *root*, however, you could destroy the whole system. Thus, you should usually be logged in as a normal user and start only the program you want to use with root permissions.

12.1.3 How to Log In as *root* From the Desktop

You can become *root*in different ways:

- In the KDE Control Center, select the `Administrator Mode` button

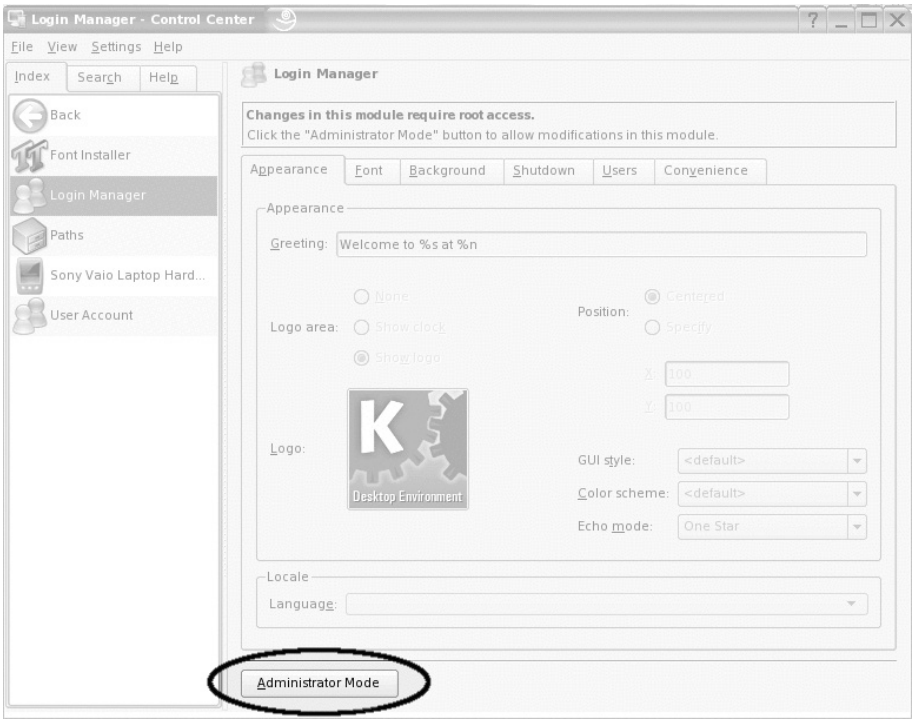


Figure 12.1: Become *root* in the KDE Control Center

Just click the `Administrator Mode` button. A window appears that asks for the administrator password. The characters you type in appear as stars for security reasons.

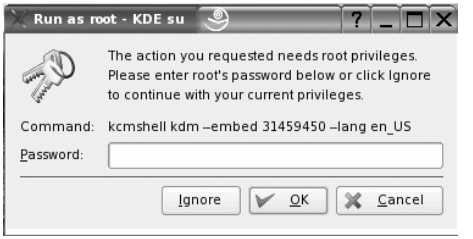


Figure 12.2: Start a Programm with *root* Permissions

- For many system configurations you can use the graphical tool YaST. To start YaST, select `System` → `YaST` in the KDE menu. The same window (Fig. 12.2) appears. You must enter the administrator password.

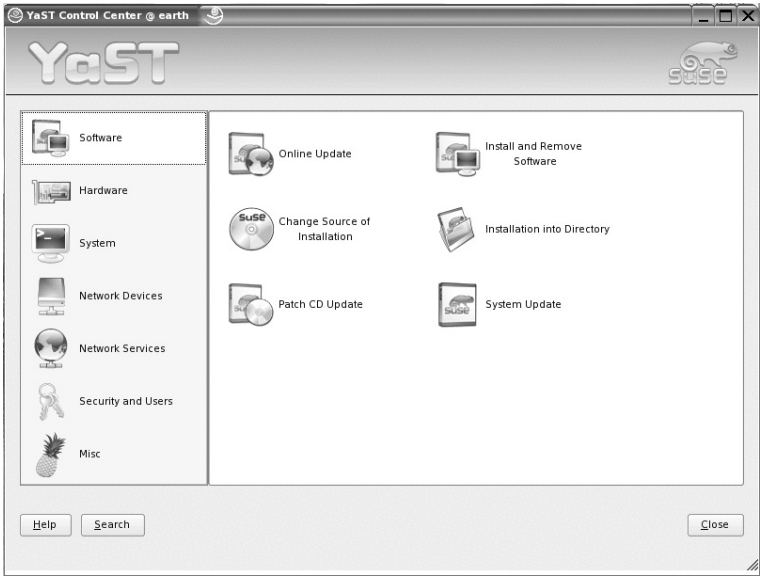


Figure 12.3: The YaST Configuration Program

- You can start a graphical application by using the command line (KDE menu → `Run Command...`). To start the application with *root* permissions, enter `kdesu` *`programm_name`*. The authetication dialog (Fig. 12.2 on the facing page appears. After you enter the *root* password, the application starts.

- If you are working with a shell (e. g. KDE menu → `System` → `Terminal` → `Konsole`), you can become *root* by entering the `su -` command. If you want to start a graphical application out of the shell, you have to use the `sux -` command instead.

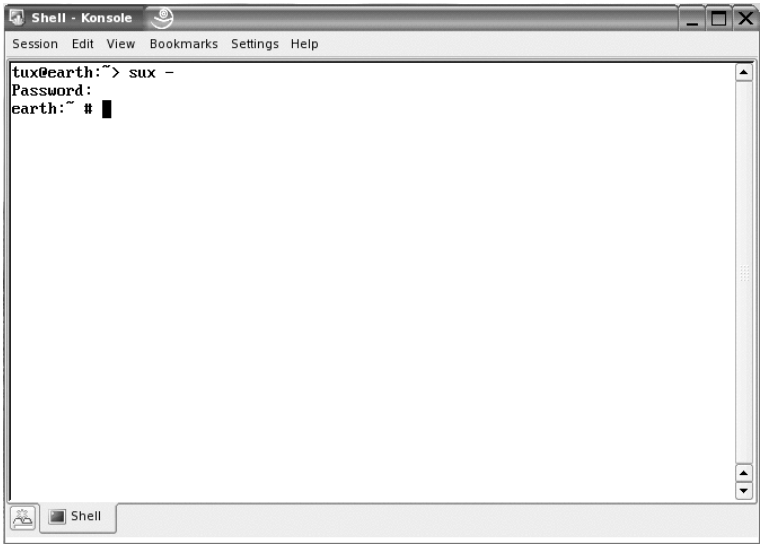


Figure 12.4: Become *root* on a Shell

You can see that you are *root* at the different prompt. To leave the administrator mode, you have to type in the `exit` command.

- Alternatively you can start a separate root shell if you are working with Konsole. Select `Session` → `New Root Console`.

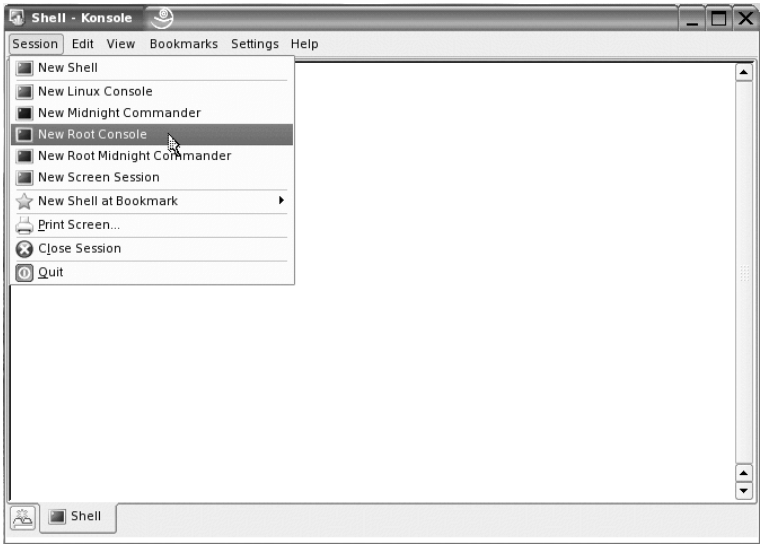


Figure 12.5: Start a New Root Shell with Konsole

12.2 How to Manage Processes

12.2.1 Describe What a Process in a Linux System Is

The underlying program on a computer is the operating system, also known as the *kernel*. Parallel to this, a series of application programs are running, referred to as *processes*. When a process is started, it receives its own number from the kernel by which it can be addressed. This is called either a *process ID* or a *process number*.

Processes themselves do not have any access to the hardware. If they need system resources, such as storage capacity or computing time, they must request the resource from the kernel. The kernel thus ensures, for example, that a program does not use memory that may already be occupied.

Because Linux is a multitasking operating system, more than one process can run simultaneously. In fact, they do not really run simultaneously; they only appear to do so. A part of the kernel, the

scheduler, switches between individual programs many times a second and assigns computing time to each of them. The user is unaware of these changes, although processing gets slower if many programs are running simultaneously.

Processes may adopt different states, such as

- *active* (running)
  The process is busy running a particular task.

- *resting* (sleeping)
  The process awaits a specific result, such as a user pressing a key or the end of a subroutine.

- *stopped*
  The process has been temporarily stopped.

12.2.2 Useing Tools to Terminate Processes

To quit an application, you can choose `File` → `Quit` from the menu bar, or you can press the "X" button in the top right corner of the window. The taskbar and the task manager work just as they do in Microsoft Windows. The possibilities of quitting an application with Linux are described in the following subsection.

Taskbar

In Kicker you can find the Taskbar right beside the icons for the virtual desktops. The taskbar has the same functionality as the taskbar in Windows.

You can kill an application by clicking the entry in the taskbar with the right mouse button. You can choose `Close` from the menu that pops up.

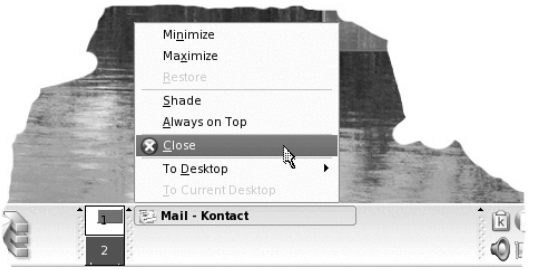


Figure 12.6: Use the Taskbar to Kill a Process

KDE System Guard

To display currently running processes, use the KDE System Guard, which can be found in the KDE menu under `System` → `Monitor` → `KDE System Guard`.

After the KDE System Guard has started, the system load (the load on the processor and the memory) is displayed on the right side of the window. To see the process table, click the `Process Table` tab (see Fig. 12.7 on the next page).

The following information is displayed in the process table:

Column	Description
`Name`	Name of the process
`PID`	Number of the process (process ID)
`User%`	Processor load caused by the process
`System%`	Processor load caused by system processes required for the process.
`Nice`	Priority of the process when allocated computer time by the kernel
`VmSize`	Virtual size of the process
`VmRSS`	Actual memory occupied
`Login`	Login name of the owner
`Command`	The start command for this process

Table 12.1: KDE System Monitor Information

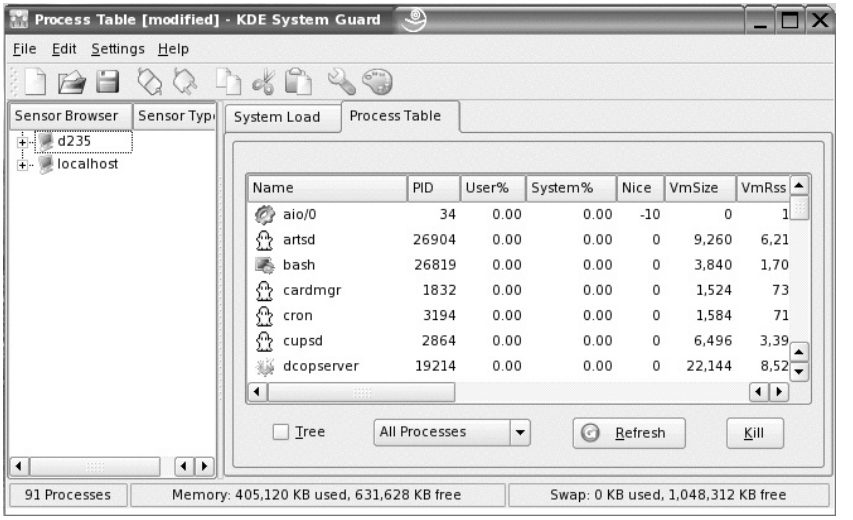


Figure 12.7: All Currently Running Processes

To end a process, click the corresponding line and then click `Kill`.

Note! Every user (except for the system administrator *root*) can kill only his or her own processes.

xkill

You can also kill a graphical application using the xkill program. You can start it by entering `xkill` in the command line (KDE menu → `Run Command...`).

The mouse pointer changes to a skull and you can move it to the window of the application you want to kill. You can click anywhere on the window to kill the application.

Exercise: Terminate Processes

1. Start the command line via KDE menu → `Run Command...`, enter `xeyes` and click `Run`.
2. Kill xeyes by clicking on the entry in the taskbar with your right mouse button and select `Close`.
3. Start the command line again via KDE menu → `Run Command...`, enter `xeyes` and click `Run`.
4. Start the KDE System Guard by selecting `System` → `Monitor` → `KDE System Guard` from the KDE menu.
5. Select the `Process Table` tab.
6. Look for the process called `xeyes`, activate it with a mouse click, and click the `Kill` button.
7. In the confirmation dialog, click `Kill`.
8. Start the command line by selecting → `Run Command...` from the KDE menu, enter `xkill` and click `Run`.
9. Move the mouse pointer somewhere over the KDE System Guard window and click once on it.

12.3 Install and Uninstall Software

In the following section you will often find the word “package.” A package includes the files you need for a special application and additional information such as:

- Information about dependencies between packages (for example, package A is required to install package B)
- A description of the application
- Information about the author of the package
- ...

The common package format of SUSE LINUX is RPM (*Redhat Package Manager*). The executable files in a package are compiled. Because of this, you need to look what Linux distribution the package is for, if you want to download a package from the Internet.

To install and uninstall software, you have to become `root`. (Be aware that there are different ways of installing and uninstalling programs.)

12.3.1 Software from the SUSE LINUX CD/DVD

First of all, if you want to install (or deinstall) software from your SUSE LINUX CDs or DVD[1] you have to start YaST: KDE menu → `System` → `YaST`. In the right part of the window, you will see the `Install and Remove Software` entry. Click once on this entry and another window opens (see Fig. 12.8).

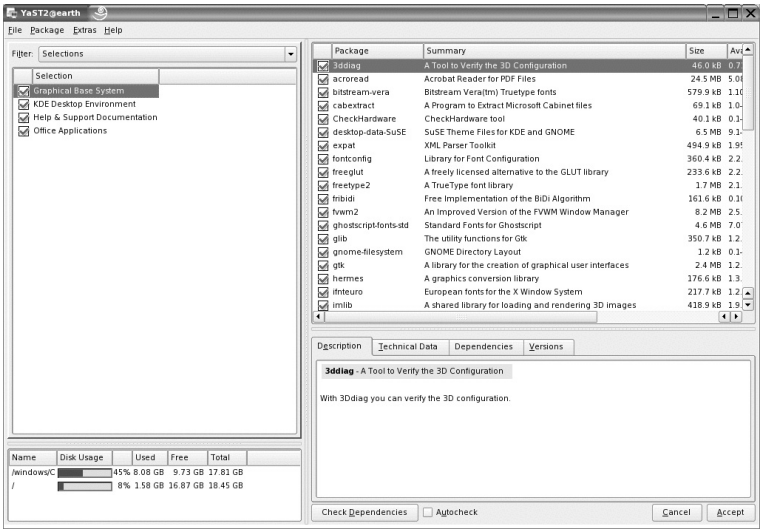


Figure 12.8: Installing and Deinstalling Software with YaST

[1] SUSE LINUX Professional includes DVDs.

Because a lot of software is delivered with SUSE LINUX, you have different filters to choose from. You can choose the filter with the pull-down menu in the top left corner. The following filters are available:

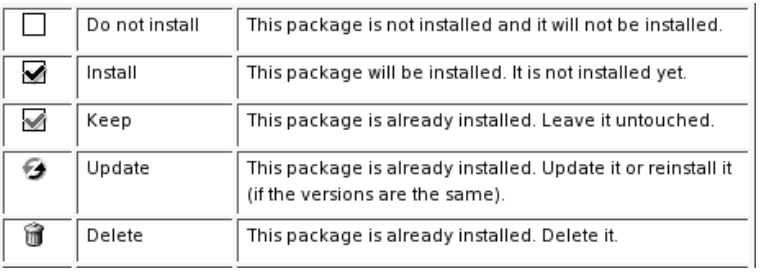
`Selections` Shows only the installed packages.

`Package Groups` Shows all software that is available on the known installation medias.

`Search` You can enter a search term and where you want YaST to search.

`Installation Summary` Shows all the packages with the marked status.

In most cases you will know the name of the package you want to install; knowing that will help you select the `Search` filter easily. Enter the package name or parts of the package name or some keywords into the `Search` text field and press the `Search` button. The matched packages are listed in the right area. The installation state is shown by a small symbol in front of the package name. The most important symbols are shown in figure 12.9. A overview about all possible symbols can be reached via the `Help` → `Symbols` menu.



☐	Do not install	This package is not installed and it will not be installed.
☑	Install	This package will be installed. It is not installed yet.
☑	Keep	This package is already installed. Leave it untouched.
	Update	This package is already installed. Update it or reinstall it (if the versions are the same).
	Delete	This package is already installed. Delete it.

Figure 12.9: The Most Important Symbols for Software Installation with YaST

Click on the symbol of the package you want to install until the “install” symbol appears. Then click the `Accept` button.

You may see a dialog indicating that the dependencies between the packages cannot be solved and that some other packages need to be installed, too. In most cases you can simply confirm this dialog. If the wrong CD or DVD is in your CD/DVD drive, a warning appears.

Exercise: Install and uninstall software from CD/DVD

1. Start YaST by selecting → `System` → `YaST` from the KDE menu.
2. Enter the root password (`secret`) and click `OK`.
3. Click once on the `Install and Remove Software` icon.
4. Select the `Search` filter.
5. Enter `little` and `penguins` into the `Search` text field and click the `Search` button.
6. Select the checkbox of the packages found `xpenguins`.
7. Click the `Accept` button.
8. When the warning appears, insert the SUSE LINUX installation CD into your CD drive and click `OK`.
9. Close the YaST window after the installation is completed.
10. Start the installed programm (KDE menu `Games` → `Amusement` → `xpenguins`).
11. To stop the program, select `Games` → `Amusement` → `xpenguins-stop` from the KDE menu.
12. Start YaST again by selecting → `System` → `YaST` from the KDE menu.
13. Enter the root password (`secret`) and click `OK`.
14. Click once on the `Install and Remove Software` icon.
15. Select the `Package Groups` filter.
16. Activate the package group `Amusement` → `Toys`
17. To uninstall xpenguins, click two times on the symbol in front of the `xpenguins` entry. The symbol must be a trash bin.
18. Click the `Accept` button.
19. Close the YaST window after the deinstallation has been completed.

12.3.2 Install Foreign RPMs

If you have downloaded a RPM package or you have a CD with additional RPM packages, you can start the installation with Konqueror. Just browse to the package and click once on the icon. The description of the package is shown by Konqueror and an `Install package with YaST` button appears at the top.

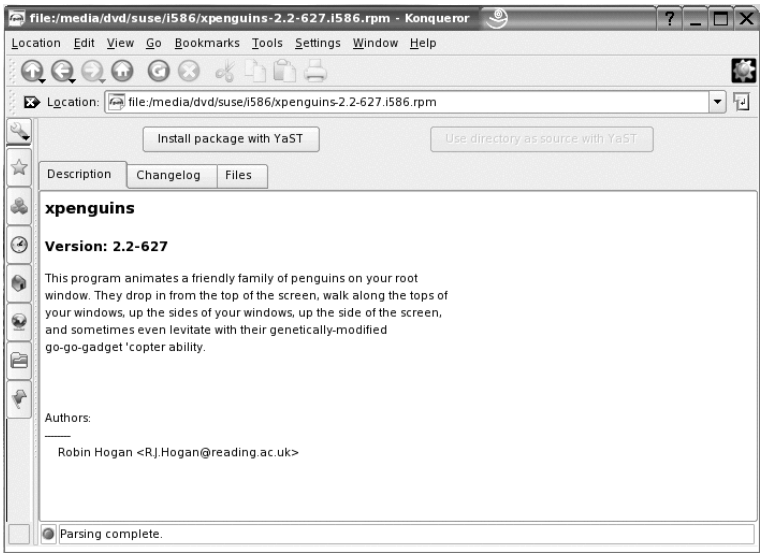


Figure 12.10: Konqueror Shows the Content of an RPM File

After clicking on this button, you are asked to enter the root password. The installation then starts automatically.

12.3.3 Compile and Install Source Files

The programs in an RPM package are still compiled. Because of this, an RPM package is specific for one Linux supplier or one Linux distribution. Sometimes, if you have luck, you can use a RPM package made for another distribution, but this will be the exception.

If you want to install an application that is not available for your distribution, you need to compile the source files on your own. The tools you need for compiling programs are not included in the SUSE LINUX Personal edition (but they are included in the Professional edition).

Summary

- You know how to use the *root* account for system-wide adjustments.
- You know how to terminate processes / applications on a Linux system.
- You understand how to install applications on your Linux system.

13 Finding Help and Training Support

Objectives

After you complete this chapter, you should be able to do the following:

- Describe how to find help for SUSE LINUX on your system and the Internet and how to get more information on advanced functions.
- Describe how to find training for SUSE LINUX and Novell services running on Linux and how to register for the training you need.

13.1 Help for SUSE LINUX

SUSE provides its own help system – *SUSE HelpCenter*. To access the HelpCenter, click the lifesaver icon in the KDE panel. Konqueror starts and displays the help texts.

Figure 13.1: The Lifesaver Icon Starts the SUSE HelpCenter

Help programs are available in most KDE applications and can be started by pressing F1. Because the help programs use HTML format, you can follow any embedded hyperlinks (by clicking the desired entry in the table of contents).

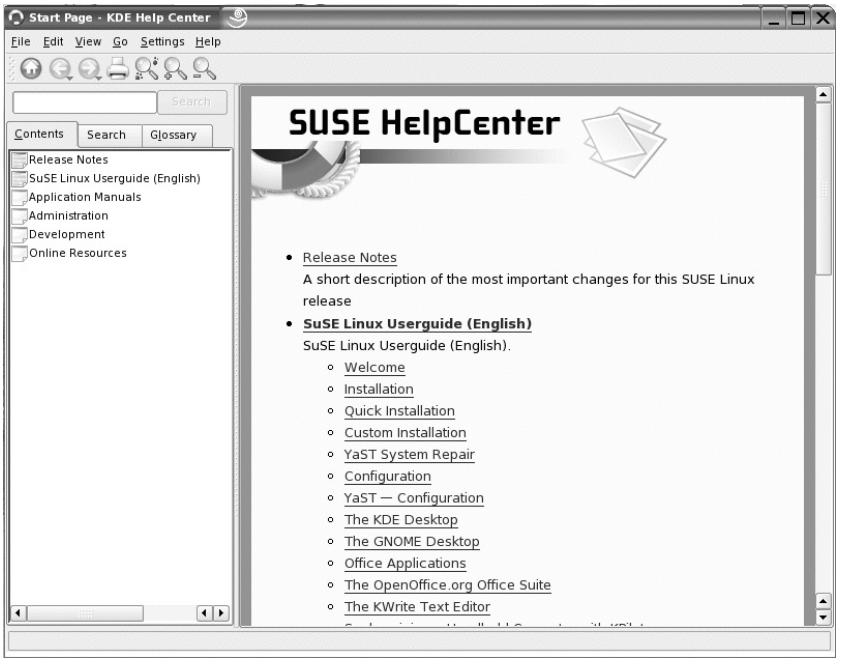


Figure 13.2: The Help for SUSE LINUX

13.2 Help on the Internet

Help is usually available on the Internet, especially for more complex challenges. The Internet, which has greatly contributed to the spread of Linux, now offers a very wide variety of sources for expert know-how on all questions concerning Linux.

Detailed help for SUSE LINUX-specific issues is available in the SUSE Support Database:

`http://portal.suse.com/sdb/en/index.html`

You can find general help with Linux at these addresses:

`http://www.linux.com/`
`http://www.linux.org/docs/index.html`
`http://www.tldp.org/`
`http://www.llp.fu-berlin.de/lsoft/index.html`

In many cases you find the right help using an Internet search engine such as Google.

13.3 How to Get SUSE LINUX Training

SUSE Training features a number of courses on subjects for Linux system administrators and network administrators. Furthermore, these courses are an excellent preparation for the certification exams of the Linux Professional Institute (LPI) or the new Linux certification programs from Novell being launched later in 2004. More information about SUSE courses and certification offerings are presented at the following Web site:

`http://www.suse.com/training/`

For Novell offerings, especially the Novell Certified Linux Engineer and the new Novell Certified Linux Professional, you can bookmark the following Web site and visit it from time to time because many new Novell Linux training offerings will launch later in 2004:

`http://www.novell.com/training/`

Later this year (2004), Novell will also announce new user training for the Linux desktop. This will be posted on the Web site given above.

To register for training, you can use the Novell Training Locator to find a certified Training Provider near you:

`http://www.novell.com/training/locator/SearchAdvanced.jsp`

Summary

- You can find help directly on your system and on the Internet for all aspects of your SUSE LINUX 9.1 Personal distribution.
- You can search the Web sites from SUSE and Novell to find out more about training and certification offerings.
- You can use the Novell Training Locator to find a Training Provider near you.

14 Take a Break. . .

Objectives

After you complete this chapter, you should be able to do the following:

- Describe how to play audio and MP3 files or watch a movie on SUSE LINUX 9.1 Personal.
- Describe how to use some of the games installed with SUSE LINUX 9.1 Personal.

14.1 Listen to the Music. . .

14.1.1 Playing an Audio CD

When you insert an audio CD into your CD drive, KDE detects the CD and a dialog appears.

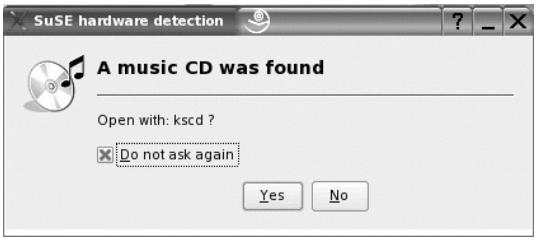


Figure 14.1: An Audio CD Was Found

If you click on the `Yes` button, the KsCD program begins to play the audio CD. If you want to start KsCD manually, select KDE menu → `Multimedia` → `CD Player`.

Figure 14.2: Playing an Audio CD

If you want to change the volume, click on the button with the Volume icon. A slider appears. You can adjust the volume by moving the slider up or down.

If you want to have more sound options, right-click the Volume icon and select `Show Mixer Window` from the menu.

14.1.2 Playing MP3 Files

To play MP3 files or other audio files (such as Ogg Vorbis or WAV), select the XMMS program. You can start it by selecting KDE menu → `Multimedia` → `Audio Player`

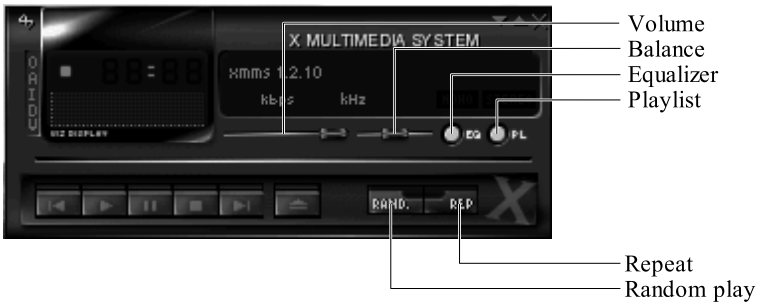


Figure 14.3: The User Interface of XMMS

To play only one file, press the Play button, select the file in the dialog, and press the `Play` button. To play another song, click on the Play button with the right mouse button and select `Play File`.

XMMS also supports playlists. To see or manipulate the playlist, press the `PL` button at the right of the window. You can add files to the playlist by pressing the `+FILE`button. To remove files from the playlist, press the `-FILE`button. These two buttons are displayed in a short menu if you hold down the mouse button. With the menu items you can add all files of a directory or clear the whole playlist.

14.2 Watching Movies

Although it is technically possible to watch movies with Linux, a lot of legal issues must be considered. The movie on a DVD is encrypted and cracking encrypted information is illegal. Applications

are available on the Internet to watch DVDs. However, these programs are illegal, so SUSE LINUX is not allowed to put them on the distribution.

Another problem is commercial file formats. Quicktime is a format that was developed by the Apple Computer, Inc. Because Apple has not made Quicktime available for Linux, you can either use illegal tools from the Internet to see a Quicktime movie, or you can use an emulation like CrossOver Office from Codeweavers Inc. and install the Windows application to see the movie.

You can watch Real movies without any problems using a Linux version of the Real Player. This version is available on the SUSE LINUX Personal distribution. You can start the Real Player from the KDE menu → `Multimedia` → `RealPlayer`.

Figure 14.4: Watch a Movie with Real Player

You can also watch MPEG or AVI movies without a problem. The program for watching them is called Kaffeine and can be started from the KDE menu → `Multimedia` → `RealPlayer`.

Figure 14.5: Watch an MPEG Movie with Kaffeine

14.3 KDE Games

14.3.1 Frozen Bubble

Frozen Bubble is a little bit like the well-known game Tetris. You have to shoot colored bubbles. When you have three or more bubbles of the same color side by side, they disappear.

You can start Frozen Bubbles from the KDE menu with `Games` → `Arcade`. In the main menu you can move aroung using the ↑ and ↓. To activate the selected entry, press ↵.

Figure 14.6: The Menu of Frozen Bubble

Using the ← and →, you can specify the direction in which the bubble will be shot, with ↑ you shoot bubbles and with Esc you can quit the game.

Figure 14.7: Shooting with Frozen Bubbles

14.3.2 Enigma

In Enigma you have to find pairs of stones with the same color. You have to direct a marble with your mouse. This marble needs time to accelerate and the floor has some friction.

Most of the stones are only walls, but other stones have special properties. Some stones are movable, other stones can be destroyed, and some magic stones show their color if you hit them with the marble.

To start Enigma, select `Games` → `Puzzle` → `Enigma` from the KDE menu. You can use your mouse to select an item from the menu.

Figure 14.8: The Menu of Enigma

In the next screen, you can select the level you want to play. After you select your playing level, the game starts. To quit, you can press Esc.

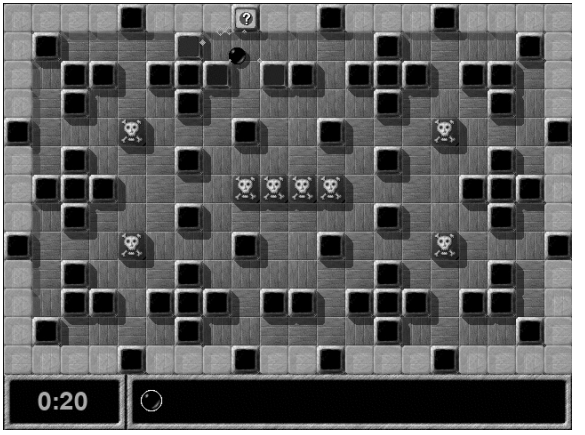


Figure 14.9: A Level of Enigma

14.3.3 KMines

KMines is the KDE version of Minesweeper. To start it, select KDE menu → `Games` → `Puzzle` → `KMines`

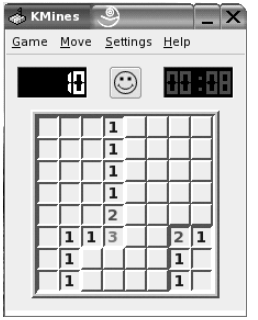


Figure 14.10: The KDE Version of Minesweeper

14.3.4 Knights

Knight is a chess game. The first time you start the Knight game you must configure a few of the settings. To start Knight, select KDE menu → `Games` → `Board Games`. In the Knights Setup Wizard, click on the `Next` button. Accept the license by activating `Yes` and clicking `Next`. To let the wizard search for a chess engine just click `Next` again. If you want to play Knights over the network or against a virtual player, select `Yes` in the following dialog to configure a chess server. Click the `Next` button and then click the `Finish` button to finish the configuration.

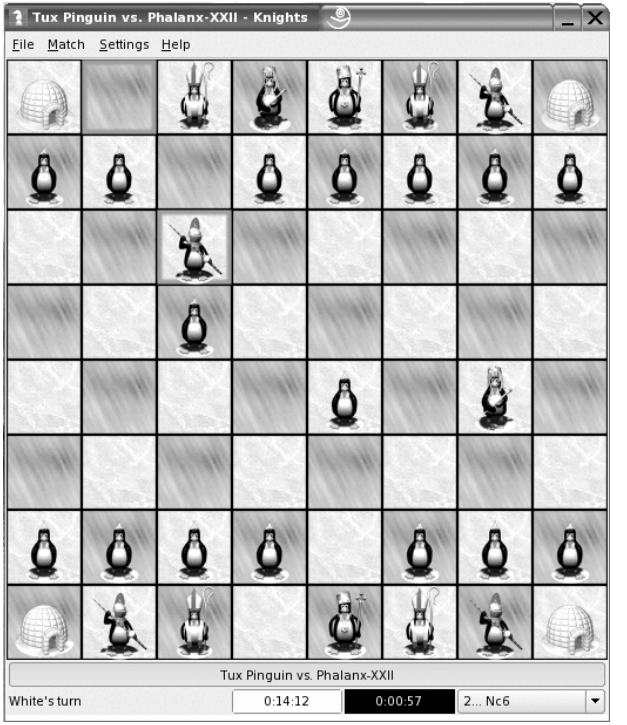


Figure 14.11: A Chess Game Called Knights

14.3.5 Patience

Patience is similar to the Windows Solitaire game Solitaire. To play Patience, select KDE menu → `Games` → `Card Games`.

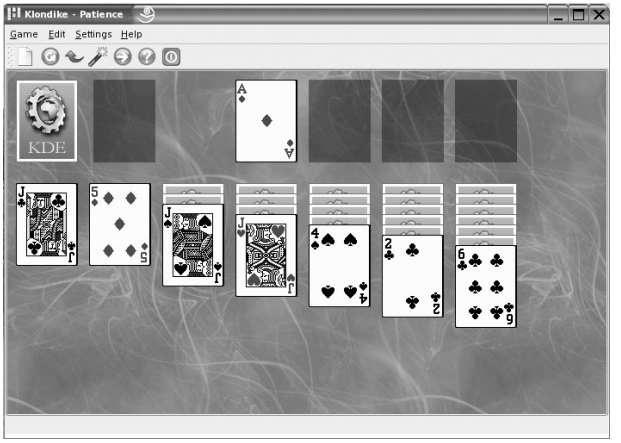


Figure 14.12: The KDE Version of Solitaire

Summary

- You can play audio CDs and other music files on your Linux machine.
- You can watch movies with those players freely available for the Linux platform.
- You can play games on your Linux machine (see the end of this course).

Appendix

A Alternatives for Windows Applications

The following tables give you an overview about Windows applications and their Linux counterparts. The column *Where to Find* contains the path to the application in the KDE Menu. If SUSE LINUX 9.1 Personal does not contain the program, a link to the home page of the application is given instead.

A.1 Office Applications

Windows Application	**Linux Application**	**Where to Find**
MS Word	OpenOffice.org Writer	`KDE Menu` → `Office` → `Wordprocessor`
MS Excel	OpenOffice.org Calc	`KDE Menu` → `Office` → `Spreadsheet`
MS Powerpoint	OpenOffice.org Impress	`KDE Menu` → `Office` → `Presentation`
MS Access	Rekall	`http://www.rekallrevealed.org`
Acrobat Reader	Acrobat Reader	`KDE Menu` → `Office` → `Document Viewer`
Quicken	GNUCash	`http://www.gnucash.org/`
MS Editor	Kate	`KDE Menu` → `Utilities` → `Editor`
Calculator	KCalc	`KDE Menu` → `Utilities` → `Calculator`

Table A.1: Office Applications

A.2 Internet Applications

Windows Application	Linux Application	Where to Find
Internet Explorer	Konqueror	KDE Menu → Internet → Web Browser
Outlook Express	Kontact	KDE Menu → Office → Kontact
MSN Messenger, Yahoo Messenger, ICQ, ...	Kopete	KDE Menu → Internet → Chat
Frontpage Express	OpenOffice.org Writer	KDE Menu → Internet → Create Web Pages

Table A.2: Internet Applications

A.3 Data and File Management

Windows Application	Linux Application	Where to Find
Windows Explorer	Konqueror	KDE Menu → System → File Manager → Home
WinZip	Ark	KDE Menu → Utilities → Archiving
Nero, WinOnCD, CloneCD, ...	K3b	KDE Menu → Multimedia → CD/DVD Burning

Table A.3: Data and File Management

A.4 Multimedia Applications

Windows Application	Linux Application	Where to Find
Windows Media Player	Kaffeine	KDE Menu → Multimedia → Video Player
Adobe Premiere	MainActor	http://www.mainconcept.de
RealPlayer	Real Player	KDE Menu → Multimedia → Real-Player
AudioRecorder	KRecord	KDE Menu → Multimedia → Recording
Audio Editing	Audacity	http://audacity.sourceforge.net

Table A.4: Multimedia Applications

A.5 Publishing Applications

Windows Application	Linux Application	Where to Find
Adobe Photoshop	Gimp	KDE Menu → Graphics → Image Editing
Adobe PageMaker	Scribus	http://www.scribus.net/
Photo Archiving	Digikam	KDE Menu → Graphics → Photograph
Image Scanning	XSane	KDE Menu → Graphics → Scanning

Table A.5: Publishing Applications

B Detailed Network Configuration for SUSE LINUX 9.1 Personal

Objectives

After you complete this chapter, you should be able to do the following:

- Understand the concept of network configuration in SUSE LINUX 9.1 Personal and apply it to your network if it has not been automatically configured for you during installation.

B.1 When to Configure

During the installation or at any time after that, you can configure your network connection:

During the installation If you are at the `Network Configuration` dialog (see Fig. B.1) and you want to configure a fixed IP address instead of letting DHCP specify it, click the `Network Interfaces` link or use the `Change...` pulldown menu.

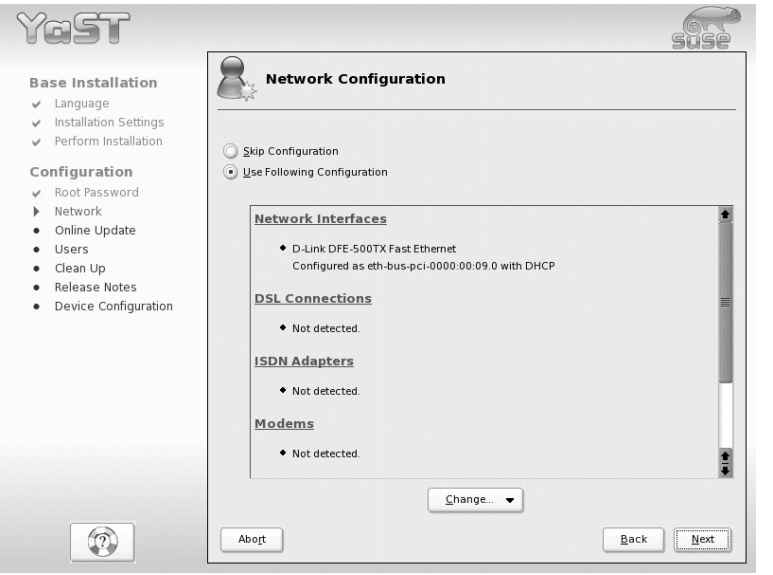


Figure B.1: Network Configuration

After the installation You can change your network configuration settings using YaST. Start YaST using KDE menu → `System` → `YaST`. You must type in the root password before the YaST window appears. (You used `secret` during the initial installation of your test machine.) Select `Network Devices` and click on the `Network Card` icon.

From this point on, there is no difference between the network configuration either during or after the installation.

B.2 Change the Network Configuration

B.2.1 Select a Network Card

The `Network cards configuration` dialog appears, listing all available network cards that have not been configured. If you have only one network card, this text area is empty. All configured network cards are listed in the lower portion of the dialog.

Figure B.2: The Configured Network Cards

As a first step, you need to change the configuration of the network card being configured for DHCP. To do this, press the `Change...` button. A window appears listing the configured network cards. If you have only one network card, only one entry appears in the text area, and the card is activated.

Figure B.3: The Activated Network Cards

To change the setting of an activated card, click on the `Edit` button. The `Network address setup`dialog appears.

You can change the automatic DHCP configuration for one of the following reasons:

1. Your network does not offer DHCP services.
2. Your computer has a static IP address in your network.
3. You know the IP address of your DNS server.
4. You need to specify a default gateway (such as a router or a firewall).

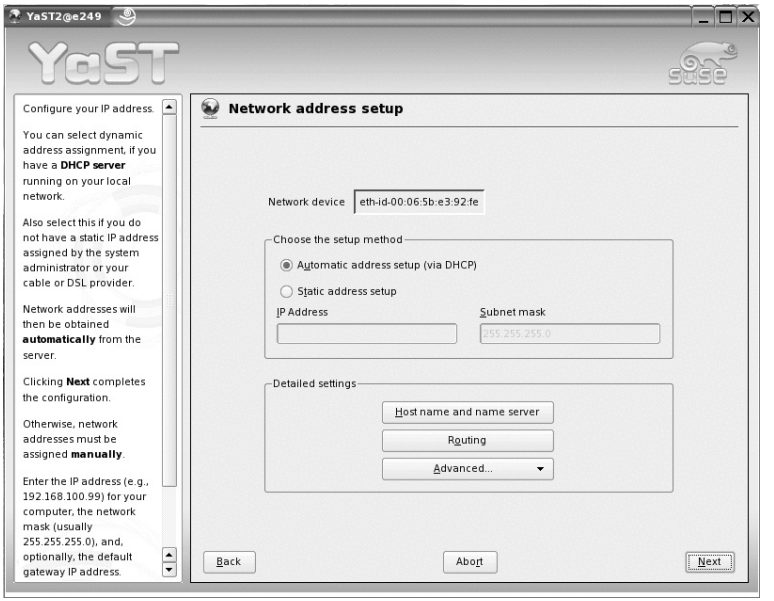


Figure B.4: The Activated Network Cards

B.2.2 Change the IP address

To enter a static IP address, select the `Static address setup` radio button. Enter your IP address in the `IP Address` text field and your network mask in the `Subnet mask` text field.

B.2.3 Change the Host Name

If you want to enter a static host name and/or specify your DNS name servers statically, go to the `Network address setup` dialog (see Fig. B.4). Then select the `Host name and name server` button.

If your computer currently gets the information about the name servers via DHCP, a hint appears. Click on the `Modify` button if you want to change the DNS information as well.

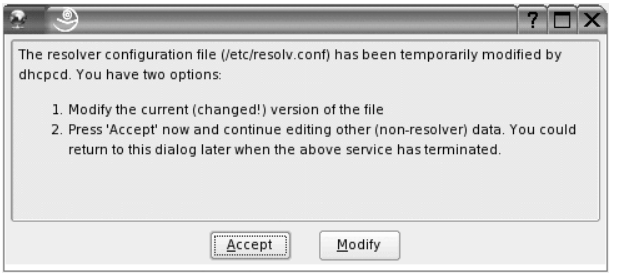


Figure B.5: Change Setting from DHCP

To enter a static host name, type the host name in the `Host Name` text field and the name of your domain in the `Domain Name` text field. If you do not want DHCP to change the name again, clear the `Change host name via DHCP` checkbox.

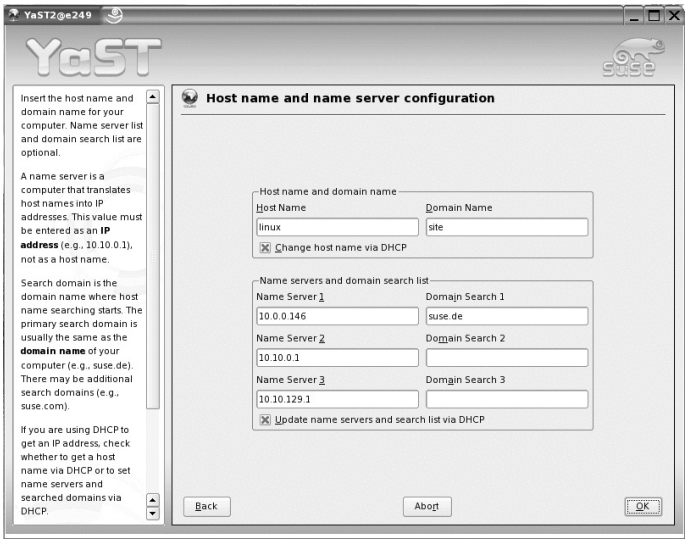


Figure B.6: Configure Host Name and Name Server

You can specify up to three name servers. Enter their IP addresses in the `Name Server 1`, `Name Server 2`, and `Name Server 3` fields. You must also type in the names of the domains these servers are responsible for (`Domain Search 1`, `Domain Search 1`, and `Domain Search 1` . If you do not want DHCP to change these entries, clear the `Update name servers and search list via DHCP` checkbox.

Click the `OK` button to return to the `Network address setup` dialog (see Fig. B.4 on page 197).

B.2.4 Change the Default Gateway

If you want to specify a default gateway, select in the `Network address setup` dialog (see Fig. B.4 on page 197) the `Routing` button.

In the following `Default Gateway` dialog, type the IP address of your gateway in the `Default Gateway` text field.

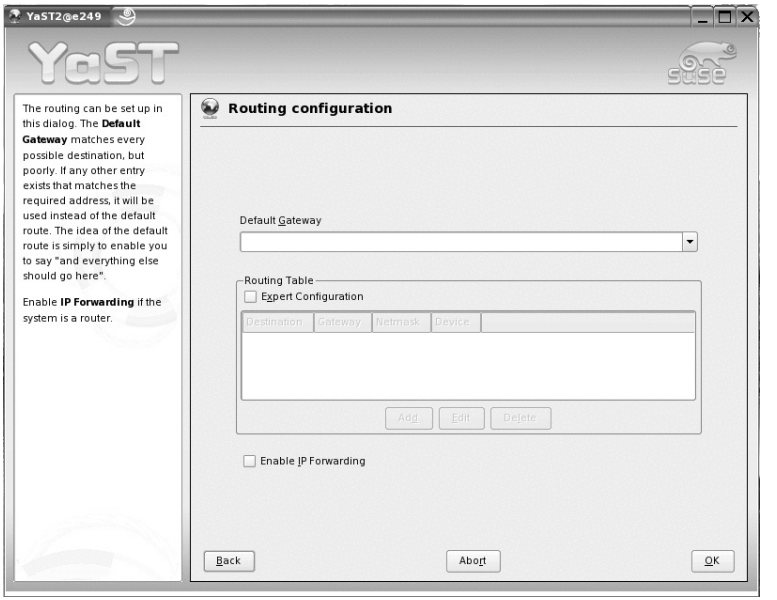


Figure B.7: Specify the Default Gateway

Clicking the `OK` button brings you back to the `Network address setup` dialog (see Fig. B.4 on page 197).

Click `Next` to close that dialog; then click `Finish` to save and apply your settings to the system. You can now close YaST and verify your new settings.

To verify your new settings, launch a Terminal by clicking the third icon from the left in the KDE panel. The new hostname is shown directly as part of your system prompt. Enter `sux -` and press `Enter`; then provide your `root` password (secret for this study kit) to become the root permissions. Now, enter `ifconfig` to display the current interface configuration on your system. For your network card, which is most likely designated as `eth0`, you can verify the new IP settings.

Exit the `su` session and close the Terminal window.

C Detailed Configuration of the Print Management CUPS

Objectives

After you complete this chapter, you should be able to do the following:

- Understand when you need to manually change your printer environment so you can install a printer not detected during initial system installation.

C.1 When to Configure

During the installation or at any time later, you can configure your printer:

During the installation If you are at the `Hardware Configuration` dialog (see Fig. C.1) and your automatic detection is not correct, click the `Printers` link or use the `Change...` pull-down menu.

Figure C.1: The Hardware Configuration

After the installation You can change your network configuration settings with YaST. Start YaST from the KDE menu → `System` → `YaST`. You have to type in the root password before the YaST window appears. (For this study kit you are provided `secret` as the root password.) Select `Hardware` and click the icon `Printer` icon.

From here there is no difference between configuring your printer during or after the installation.

C.2 Change the Printer Configuration

The upper part of the `Printer Configuration` dialog lists all automatically detected printers that have not been configured. If the printers cannot be detected automatically or if all printers are already configured, this text area displays only the `Other (not detected)` text. The lower part of the dialog lists all configured printers.

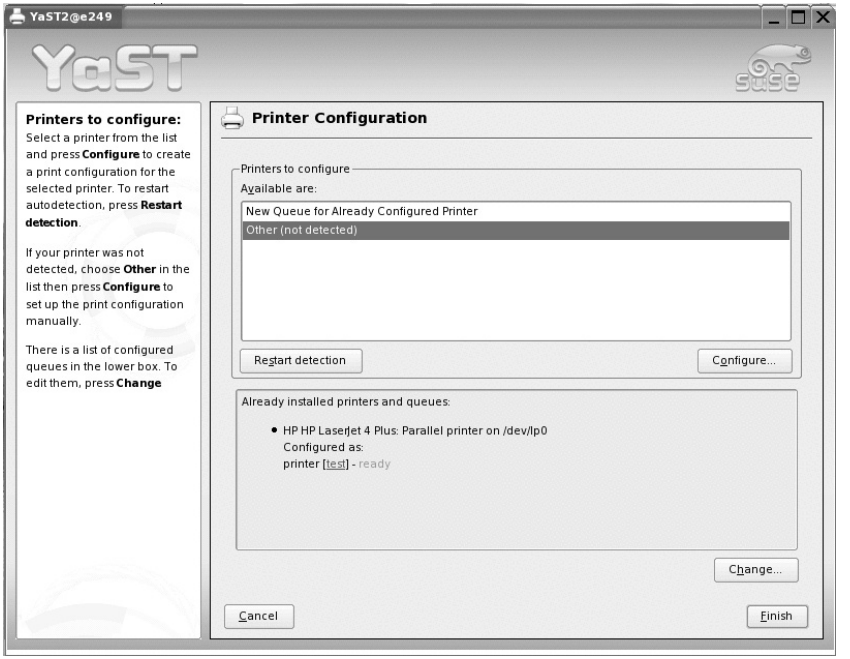


Figure C.2: The Printer Configuration

Automatically detected printers will be configured correctly by an automated process. If your printer is not detected, you have to configure it manually. To configure your printer, click the `Configure...` button.

You have to the type of your printer. If the printer is directly connected to your computer, you have to select one of the following types:

- Parallel printer
- USB printer
- Serial printer
- IrDA printer

The other types are needed, if you want to configure a printer inside your network.

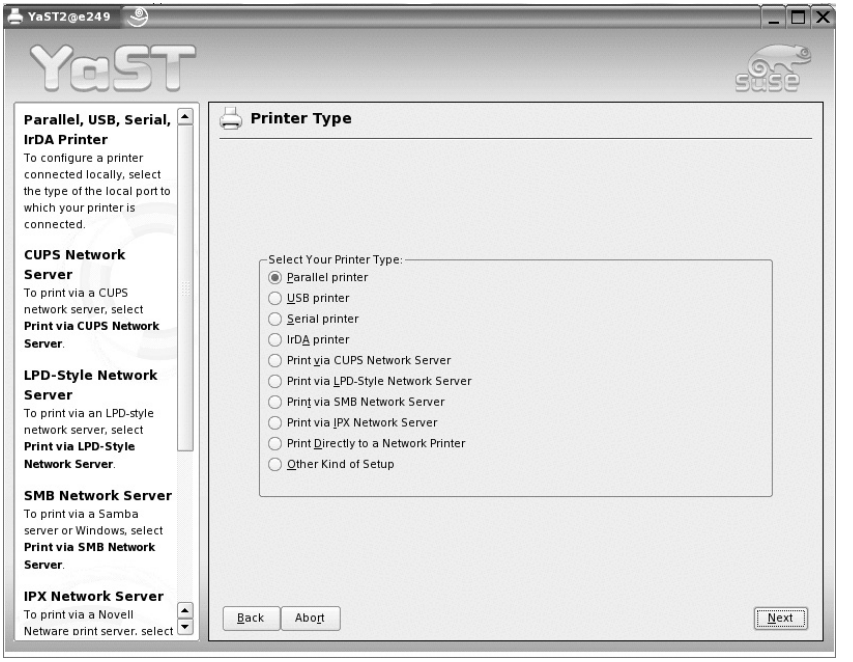


Figure C.3: Specify Your Printer Type

In the next step, select the interface your printer is connected to. The dialog can look slightly different, depending on what you have selected before.

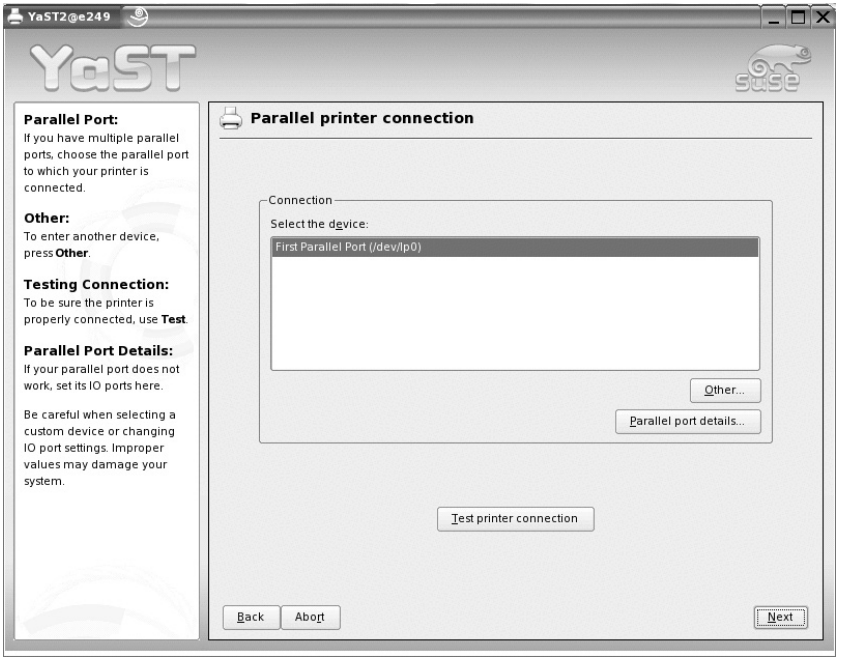


Figure C.4: Specify the Interface Your Printer is Connected To

Select an interface and click on the `Next` button.

Then enter a name for your print queue in the `Name for printing` text field. If you want, you can enter a description of your printer in the `Description of Printer` text field and the printer location in the `Location of Printer` text field.

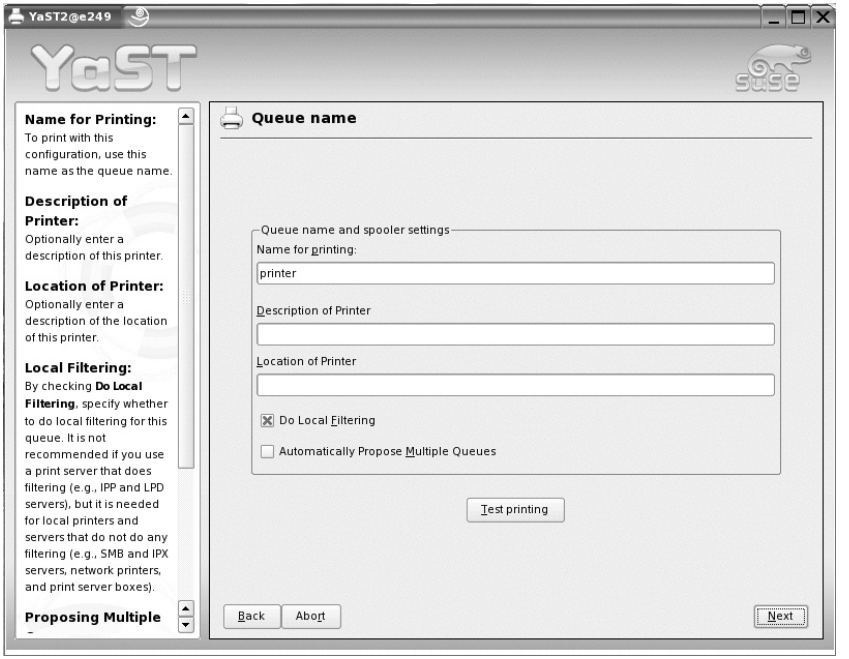


Figure C.5: Select a Name for Your Print Queue

Click the `Next` button to see the Selection dialog for the printer model.

Select the name of the manufacturer of your printer from the left side of the window. Then you can select the model from the right side of the window.

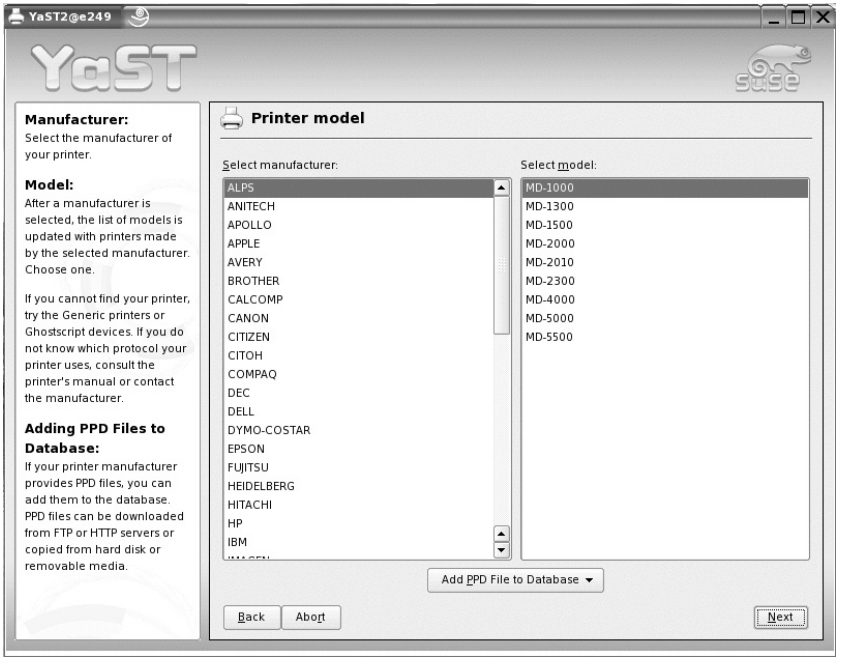


Figure C.6: Select the Model of Your Printer

After clicking the `Next` button, you will see the final dialog.

At this point, you can test your printer configuration by clicking the `Test` button. If you want to change any settings, click the `Edit` button. For example, you might want to change the default page size or the default paper tray. If you are satisfied, press the `OK` button.

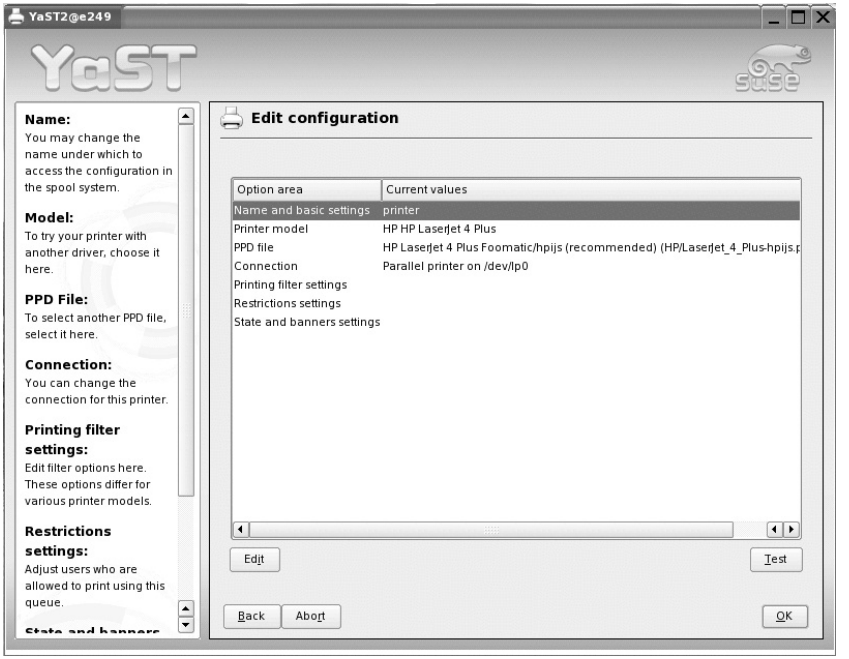


Figure C.7: The Overview of Your Printer Configuration

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100-004922-001