SUSE LINUX

INSTALLATION GUIDE

Welcome

Congratulations for selecting SUSE LINUX. A few clicks are all that is needed to prepare the installation, which takes fifteen to twenty minutes. After configuring the users and their passwords and selecting the screen resolution, your SUSE LINUX system is ready for use. If you are familiar with earlier versions of SUSE LINUX, you will notice how much the configuration with the system assistant YaST has been expanded and simplified.

The simple quick installation is explained first. If you have special wishes in connection with the programs to install, the partitioning of your hard disk, or other features, read the chapter about the custom installation. YaST additionally facilitates the configuration and administration of your hardware, Internet access, and system — without repeated reboots.

Typographical Conventions

The following typographical conventions are used in this book:

- `/etc/passwd`: files or directories
- ⟨*placeholder*⟩: replace the character string ⟨*placeholder*⟩ (including the angle brackets) with the actual value
- `PATH`: an environment variable
- `ls`: commands
- `user`: users
- (Alt): a key to press
- 'File': menu items, buttons

Acknowledgements

With a lot of personal commitment, the Linux developers continue to promote the development of Linux. We would like to express our sincere gratitude for their efforts. Without them, this distribution would not exist. Additional thanks go to Frank Zappa and Pawar. Special thanks, of course, to LINUS TORVALDS.

Have a lot of fun!

Your SUSE Team

Contents

Quick Installation

In the best case, a few clicks are sufficient to install SUSE LINUX on your computer. If no Linux system was installed on your computer previously, your hard disk is partitioned, an installed Windows system is resized, a software selection is installed, and your hardware is configured automatically. If you do not like the suggestions of the system assistant YaST (Yet another Setup Tool) or have special requirements for your system, change the individual installation suggestions manually as described in Chapter 2 on page 7.

1.1   Step One: The Start Screen

Turn on your computer and all connected hardware components and immediately insert CD 1 or the DVD in the respective drive. In the start screen, select an installation mode or boot an installed operating system. Following the successful installation, the CD only needs to be inserted in the drive occasionally to install additional software. As the CD can be forgotten in the drive, the option to boot the installed system is preselected. For installation, use the arrow keys to select 'Installation'.

> **Note**
>
> If your computer does not boot from CD 1 or the DVD, read Section 2.2 on page 9.
>
> **Note**

1.2   Step Two: Accept Suggestions

After the system is booted from CD or DVD, the SUSE system assistant YaST is started. First, select the language for your system. The language setting is automatically adopted for the keyboard layout. Then YaST checks your system. If you already installed a SUSE LINUX version on your computer, the next dialog asks whether to install SUSE LINUX from scratch or perform an update of your previous system.

If Linux was not installed on your computer previously or if you select 'New installation', YaST checks all your hardware and list the result in the suggestion dialog, shown in Figure 1.1 on page 4. This dialog also displays the partitioning suggestion (possibly resizing) and the selected installation type. If installing Linux for the first time, accept these suggestions, which are usually suitable.

The following messages and suggestions are displayed after the system check:

Mode   'New installation' is the default value here.

Keyboard   The keyboard layout defaults to the selected language. This can easily be changed.

Mouse   The detected mouse type is listed here.

Partitioning   Suggests a suitable partitioning. If Windows 9x or ME (FAT32 file system) exists on the hard disk, the resizing rate is indicated.

Software   A default system with office applications is preset.

Booting   Determines where SUSE LINUX installs the boot manager. The Master Boot Record (MBR) of the first hard disk is the default setting.

Time Zone   Depending on the selected language settings, the time zone of the respective country is selected. Check this setting as many languages are used in several countries.

Language   Shows the language setting.

Modify the YaST suggestions at any time by clicking the respective heading. The dialogs displayed enable detailed settings. The exact procedure is described in Chapter 2 on page 7. After the changes, you are returned to the overview and can proceed with the installation using the modified values by clicking 'Accept'.

⌐ **Caution** ──────────────────────────────

If the hardware was detected correctly, you do not need to change anything. Do not change the boot loader, partitioning, or hardware settings unless you know what you are doing.

────────────────────────────── **Caution** ⌐

1.3   Step Three: Installation

Before the installation begins, YaST asks in a green window whether to install with the current settings. Confirm the request with 'Yes' to start the installation. Depending on the performance of your computer, installation of your system with a large selection of application packages takes approximately fifteen minutes.

1.4   Configuration

Following the installation, make some important settings before starting using SUSE LINUX (see Section 2.6 on page 28 for detailed instructions).
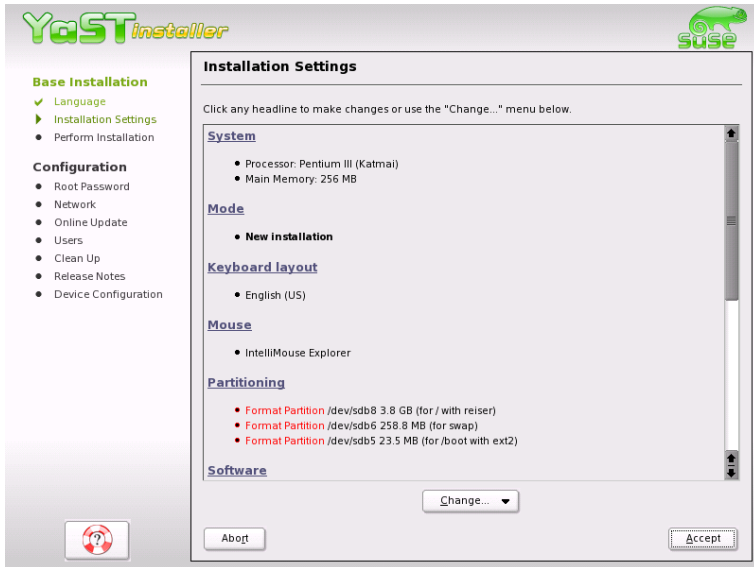
Figure 1.1: Suggestion Screen

First, set a password for the system administrator (user ☞*root*).This special user is always configured by YaST and is needed for system maintenance tasks.

┌─ **Caution** ───

Remember the root password because you can only modify the system or install programs using the `root` identity.

─── **Caution** ─┘

If a network card or other communication hardware (such as a modem or ISDN card) is found during the installation, these can now be configured and a connection can be established with the Internet or a local network (LAN). This enables use of various services during the remaining part of the procedure.

For example, if you configure an Internet connection, can perform an on-line update immediately. In this way, include the latest updates for your system.

If you establish a connection with a local network, you can configure a

name service such as NIS. YaST assumes that you will not manage any local users on your system.

This is usually the case with commercial workstations, whose users are administered centrally (e.g., on a department server). If you do not configure a name service, set up local users intended for normal operations on the system.

An additional overview displays the detected screen, graphics card, and other hardware components (printer, sound card, etc.). If necessary, change settings, such as the suggested screen resolution or the color depth. Refer to Section 2.7 on page 33. Some of the dialogs for the configuration of the additional hardware are able to search for connected devices. However, these settings do not need to be made at this stage. You can also skip this step and do it later. After the completion of this last step, your newly installed system is booted and you can start using it.

Have a lot of fun with SUSE LINUX!

Custom Installation

The previous chapter covered the quick installation procedure. This chapter provides detailed information about the settings you can modify by starting the relevant module from the suggestion window. This gives complete control over the installation.

2.1 Starting Your System from the CD-ROM

Insert the first SUSE LINUX CD or the DVD into the drive. Then reboot the computer to start the installation program from the medium in the drive.

2.1.1 Possible Problems when Starting from the CD/DVD

If you experience problems booting from CD 1, one of the following items is probably the cause. Resolve the problem as described.

- The CD-ROM drive is not able to read the boot image on the first CD. In this case, use CD 2 to boot the system. CD 2 contains a conventional 2.88 MB boot image, which can be read even by older drives.

- The boot sequence in the BIOS (Basic Input Output System) is incorrect. The BIOS is a software for activating the basic functions of a computer. Motherboard vendors provide a BIOS that is adapted to the hardware. Information about changing the BIOS settings is provided in the documentation of your motherboard and in the following paragraphs.

  Normally, the BIOS setup can only be accessed at a specific time — when the machine is booting. During this initialization phase, the machine performs a number of diagnostic hardware tests. One of them is a memory check, recognizable from the memory counter. When the counter appears, look for a line, usually below the counter or somewhere at the bottom, mentioning the key to press to access the BIOS setup. Usually the key to press is (Del), (F1), or (Esc). Press this key until the BIOS setup screen appears.

  To change the boot sequence in an AWARD BIOS, look for the 'BIOS FEATURES SETUP' entry. Other manufacturers may have a different name for this, such as 'ADVANCED CMOS SETUP'. When you have found the entry, select it and confirm with (Enter).

  In the screen that opens, look for a subentry called 'BOOT SEQUENCE'. The boot sequence is often set to something like C , A or A , C. In the former case, the machine first searches the hard disk (C) then the floppy drive (A) to find a bootable medium. Change the settings by pressing (Page up) or (Page down) until the sequence is A , CDROM , C.

Leave the BIOS setup screen by pressing $\boxed{\text{Esc}}$. To save the changes, select 'SAVE & EXIT SETUP' or press $\boxed{\text{F10}}$. To confirm that your settings should be saved, press $\boxed{\text{Y}}$.

If you have a SCSI CD-ROM drive, you need to change the setup of the SCSI BIOS. In the case of an Adaptec host adapter, for instance, open the setup by pressing $\boxed{\text{Ctrl}}$ + $\boxed{\text{A}}$. After that, select 'Disk Utilities', which displays the connected hardware components. Make a note of the SCSI ID for your CD-ROM drive. Exit the menu with $\boxed{\text{Esc}}$ then open 'Configure Adapter Settings'. Under 'Additional Options', select 'Boot Device Options' and press $\boxed{\text{Enter}}$. Enter the ID of the CD-ROM drive and press $\boxed{\text{Enter}}$ again. Then press $\boxed{\text{Esc}}$ twice to return to the start screen of the SCSI BIOS. Exit this screen and confirm with 'Yes' to boot again.

- Your CD-ROM drive may not be supported because it is an older model.

2.2 The Boot Screen

'Boot from Hard Disk' boots the already installed system. This item is selected by default because the CD is often forgotten in the drive. Select 'Installation' with the arrow keys. This will load YaST and start the installation.

The boot screen provides several options for starting from the CD. The options and the actions triggered by them are:

- **Boot from Hard Disk**: Boots the system installed on the hard disk (the system normally booted when the machine is started). This option is preselected.

- **Installation**: The normal installation mode. All modern hardware functions are enabled.

- **Installation — ACPI Disabled**: If the normal installation fails, this may be due to lacking ACPI (Advanced Configuration and Power Interface) support of the system hardware. In this case, use this option to perform the installation without ACPI support.

- **Installation — Safe Settings**: The DMA mode (for CD-ROM drives) and any critical power management functions are disabled. Experts can also use the command line to enter or change kernel parameters.
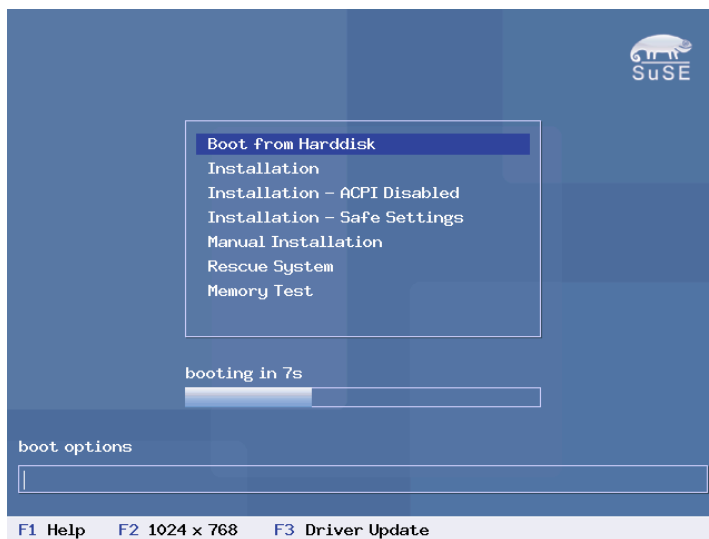
Figure 2.1: *The Boot Screen*

- **Manual Installation**: If the automatic loading of drivers causes prob-
  lems with the installation, you can perform the installation manually.
  In a manual installation, drivers are not loaded automatically. How-
  ever, this will not work if you use a USB keyboard on your machine.

- **Rescue System**: If you are unable to boot into your installed Linux
  system for some reason, you can boot the computer from the DVD or
  CD1 and select this item. This option starts a *rescue system* — a min-
  imal Linux system without a graphical user interface, which allows
  experts to access disk partitions for troubleshooting and repairing an
  installed system. Less experienced users can alternatively use the Sys-
  tem Repair tool supplied with YaST. Refer to Chapter 3 on page 37 for
  details.

- **Memory Test**: This tests your system RAM by means of repeated read
  and write cycles. This is done in an endless loop, as memory corrup-
  tion often shows up very sporadically, so many read and write cycles
  might be necessary to detect it. If you suspect that your RAM might
  be defective, start this test and let it run for several hours. If no errors
  are detected after a longer time period, you can assume that the mem-
  ory is intact. Terminate the test by rebooting.

A few seconds after starting the installation, SUSE LINUX loads a minimal ☞*Linux system*, which takes control and performs the installation. A number of messages and copyright notices are displayed then, at the end of the loading process, the YaST installation program is started. After a few more seconds, the screen should display the graphical interface that will guide you through the installation.

The YaST screens have a common format. All buttons, entry fields, and lists can be accessed with the mouse. If your mouse pointer does not move, the mouse has not been correctly detected. In this case, use the keyboard for navigation.

2.3 Language Selection

Select the language to use for SUSE LINUX and YaST. English is the default setting for the international distribution. If your mouse does not work, navigate with the arrow keys until the desired language is selected. After this, press (Tab) until 'Next' is highlighted. Then press (Enter) to confirm your language selection.
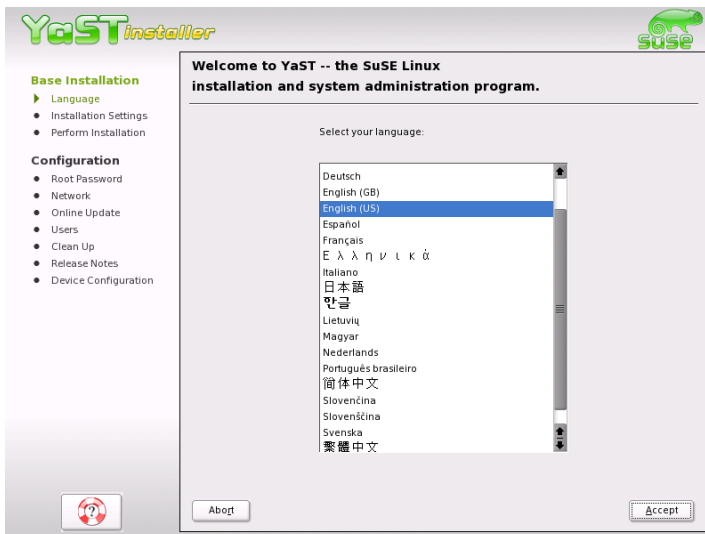
Figure 2.2: Selecting the Language

2.4 Installation Mode

Select between a 'New Installation' and an 'Update of an installed system'. The latter is only possible if a previous version of SUSE LINUX is already present. In this case, you can also boot this system with 'Boot Installed System'. If your installed system fails to boot, perhaps because some important system configuration has been corrupted, you can try to make the system bootable again with 'System Repair'. Without a previously-installed version of SUSE LINUX, it is only possible to perform a new installation.

The following sections describe the procedure of installing a new system. A description of the system repair options can be found in Chapter 3 on page 37.

Click 'OK' to continue. See Figure 2.3.
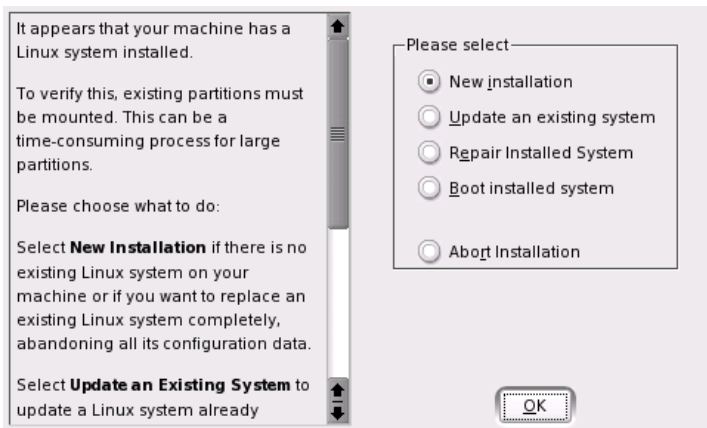
Figure 2.3: *Selecting the Installation Mode*

2.5 Installation Suggestion

After hardware detection, the suggestion window, shown in Figure 2.4 on the next page, displays some information about the hardware recognized and proposes a number of installation and partitioning options. When selecting any of these items and configuring them in the corresponding di-

alogs, you are always returned to the suggestion window, which is updated accordingly. The individual settings are discussed in the following sections.
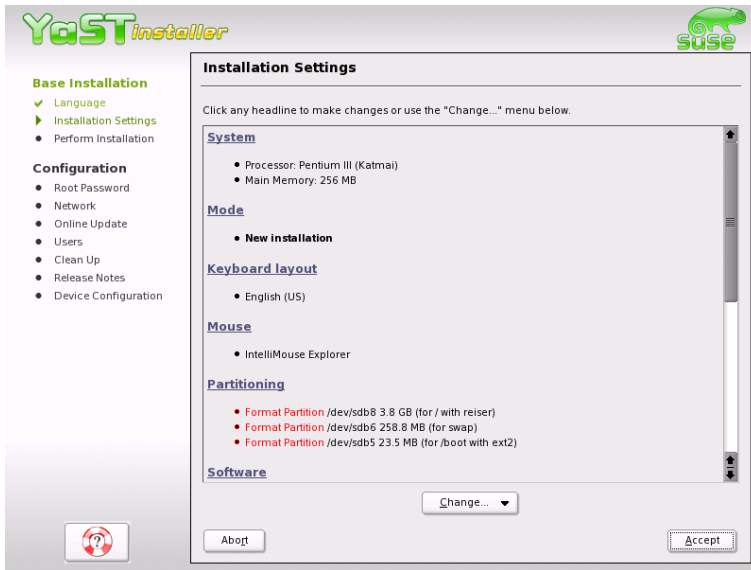
Figure 2.4: *Suggestion Window*

2.5.1 Installation Mode

Use this to change the installation mode. The options are the same as already described in Section 2.4 on the facing page.

2.5.2 Keyboard Layout

Select the keyboard layout. By default, the layout corresponds to the selected language. After changing the layout, test Y, Z, and special characters to make sure the selection is correct. When finished, select 'Next' to return to the suggestion window.

2.5.3 Mouse

If YaST did not detect your mouse automatically, press (Tab) in the suggestion window several times until 'Mouse' is selected. Then use (Space) to open the dialog in which to set the mouse type. This dialog is shown in Figure 2.5.
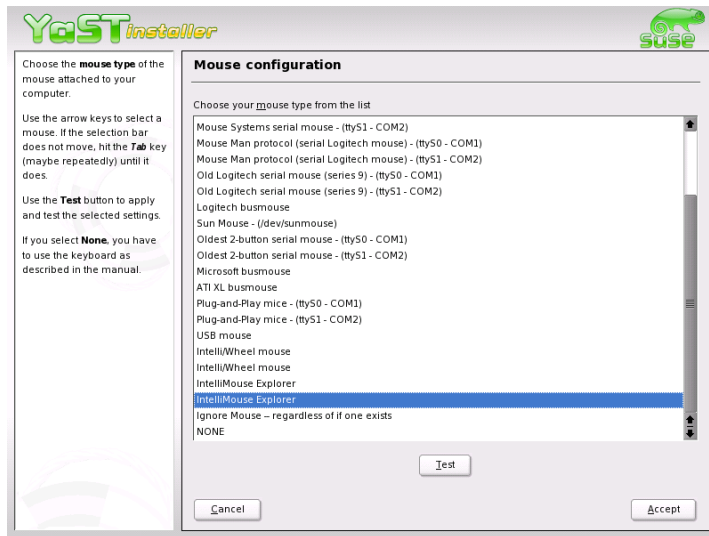
Figure 2.5: *Selecting the Mouse Type*

To select the mouse type, use (↑) and (↓). Consult the mouse documentation for information about the mouse type. After selecting a mouse type, use (Alt) + (T) to test whether the device works correctly without selecting it permanently. If the mouse does not behave as expected, use the keyboard to select another type and test again. Use (Tab) and (Enter) to make the current selection permanent.

2.5.4 Partitioning

In most cases, YaST proposes a reasonable partitioning scheme that can be accepted without change. If desired, modify this scheme to meet your needs or create a new one.

Partition Types

Every hard disk has a partition table with space for four entries. Each entry in the partition table can be a primary partition or an extended partition. Only *one* extended partition entry is allowed, however.

Primary partitions consist of a continuous range of cylinders (physical disk areas) assigned to a particular operating system. Using primary partitions, you could not set up more than four partitions per hard disk. More do not fit in the partition table.

This is why extended partitions are used. Extended partitions are also continuous ranges of disk cylinders, but an extended partition may itself be subdivided into *logical partitions*. Logical partitions do not require entries in the partition table. In other words, an extended partition is a container for logical partitions.

If you need more than four partitions, create an extended partition. This extended partition should span the entire remaining free cylinder range. Then create multiple logical partitions within the extended partition. The maximum number of logical partitions is fifteen on SCSI disks and 63 on (E)IDE disks.

It does not matter which type of partitions are used for Linux. Primary and logical partitions both work fine.

Required Disk Space

The amount of hard disk space needed depends on the intended use of the system. Available space limits what applications can be installed. The following hints give some guidelines for space requirements:

- Minimal system: 180 MB

  No graphical interface (X Window System) is installed, which means only console applications can be used. Also, only a very basic selection of software is installed.

- Minimal system with graphical interface: 500 MB

  This includes X and some applications.

- Graphical system with modern applications: between 1 GB and 2 GB

  This includes recent versions of graphical desktops, namely KDE and GNOME, and bigger application packages, such as OpenOffice.org and Netscape or Mozilla.

- For downloading movies and music with Linux: 2 GB

- Both items: 3 GB

- Burning CDs and the items listed above: 4 GB

These guidelines can help develop a partitioning scheme for your system:

- Under 500 MB:

  A swap partition and a root partition (/).

- Between 500 MB and 4 GB:

  A small boot partition located *within the first cylinders* of the hard disk (/boot, at least 8 MB or 1 cylinder) to hold the kernel and the boot loader. Also create a swap partition of approximately 256 MB then use the rest for the root partition (/).

- For more than 4 GB:

  Boot (/boot), swap, root (250 MB), home directories (/home) with about 200 MB for each user, and the rest for programs and data (/usr). You may also reserve an extra partition each for /opt and /var.

Some commercial programs install their data in /opt. If necessary, create a separate partition for /opt or make the root partition large enough. KDE and GNOME are also installed in /opt.

Note

Things should be fine if your partitioning setup is similar to that proposed by YaST. This is usually a small partition for /boot at the beginning of the hard disk (about 10 MB, or 1 cylinder on a large hard disk), a swap partition (between 128 and 256 MB), and the rest for /.

Note

Partitioning with YaST

When you select the partitioning item in the suggestion window for the first time, YaST displays a dialog listing the partition settings as currently proposed. Accept these current settings without change or change them before continuing. Alternatively, discard all the settings and start over from scratch.

Nothing in the partitioning setup is changed if you select 'Accept Suggested Partitioning Setup'. If you select 'Change Suggested Partitioning
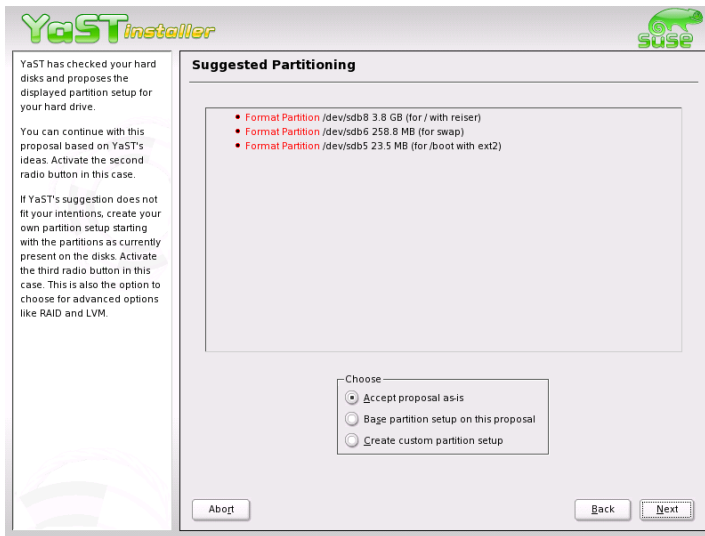
Figure 2.6: Editing the Partitioning Setup

Setup', the 'Expert Partitioner' opens. It allows you to tweak the partition setup in every detail. The original setup as proposed by YaST is offered there as a starting point.

If you select 'Create custom partitioning setup', a dialog, like that in Figure 2.7 on the following page, opens in which to select a hard disk from those on your system. SUSE LINUX will be installed on the disk selected in this dialog.

The next step is to determine whether the entire disk should be used ('Use entire hard disk') or whether to use any existing partitions, if available, for the installation. If a Windows operating system was found on the disk or if there is some other FAT file system, select whether to delete or resize the partition. Before doing so, read Section 2.5.4 on page 20. If desired, go to the 'Expert Partitioner' dialog to create a custom partition setup at this point.

┌─ **Caution** ─────────────────────────────────
If you choose 'Use entire hard disk', all data on that disk will be lost.
───────────────────────────────────── **Caution** ─┘
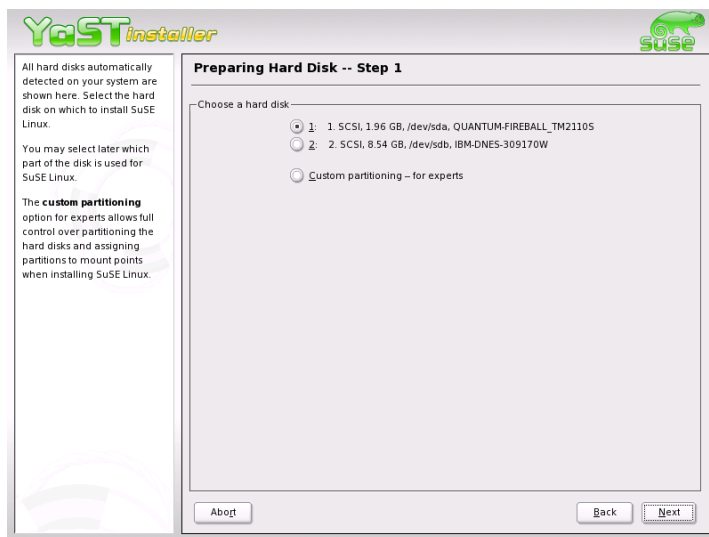
Figure 2.7: Selecting the Hard Disk

YaST checks during the installation whether the disk space is sufficient for the software selection made. If not, YaST automatically removes parts from the software selection as needed. The suggestion window then includes a notice to inform you about this. As long as there is sufficient disk space available, YaST simply accepts your settings and partitions the hard disk accordingly.

Creating a Partition

1. Select 'New'. If several hard disks are connected, a selection dialog appears in which to select a hard disk for the new partition. Then, specify the partition type (primary or extended). Create up to four primary partitions or up to three primary partitions and one extended partition. Within the extended partition, you can create several logical partitions (see Section 2.5.4 on page 15).

2. Select the file system to use to format the partition and a mount point, if necessary. YaST suggests a mount point for each partition created. Details of the parameters are provided in the next section.

3. Select 'OK' to apply your changes.

The new partition is then listed in the partition table. If you click 'Next', the current values are adopted and you are returned to the suggestion screen.

Partitioning Parameters

If you create a new partition or modify an existing partition, various parameters can be set in the partitioning tool. For new partitions, suitable parameters are set by YaST and usually do not require any modification. To perform manual settings, proceed as follows:

1. Select the partition.

2. 'Edit' the partition and set the parameters:

   - File System ID

     Even if you do not want to format the partition at this stage, assign it a file system ID to ensure that the partition is registered correctly. Possible values include 'Linux', 'Linux swap', 'Linux LVM', 'Linux EVMS', or 'Linux RAID'. Refer to the Administration Guide for details on LVM, EVMS and RAID.

   - File System

     To format the partition immediately within the scope of the installation, specify one of the following file systems for the partition: 'Swap', 'Ext2', 'Ext3', 'ReiserFS', or 'JFS'.

     Swap is a special format that makes the partition usable as virtual memory. Every system should have at least one swap partition of at least 128 MB (see note on the next page). ReiserFS is the default for Linux partitions. ReiserFS as well as JFS and Ext3 are journaling file systems. These file systems are able to restore your system very quickly after a system crash, as write processes are logged during the operation. Furthermore, ReiserFS is very fast in handling lots of small files. Ext2 is not a journaling file system. It is rock solid and good for smaller partitions, as it does not require too much disk space for management.

   - File System Options

     Here, specify various parameters for the selected file system. Depending on the file system used, various options are offered. Only make changes if you are absolutely sure what you are doing.

   - Encrypt File System

If you activate the encryption, all data is written to the hard disk in encrypted form. This increases the security of sensitive data, but reduces the system speed, as the encryption takes some time.

- fstab Options

  Here you can specify various parameters for the administration file of the file systems (/etc/fstab). Experienced users have the possibility to modify a number of options. Refer to the relevant chapter in the Administration Guide before changing anything.

- Mount Point

  This specifies the directory at which the partition should be mounted in the file system tree. Various YaST suggestions can be expanded at the respective entry field. If you accept these suggestions, the default file system structure is implemented. However, you can also specify any other names.

3. Select 'Next' to activate the partition.

Note

If you partition manually, create a swap partition. The swap partition is used to free the main memory from data that is not used at the present moment. This keeps the main memory free for the most frequently-used important data.

Note

Resizing a Windows Partition

If a hard disk containing a Windows FAT or NTFS partition was selected as installation target, YaST offers to delete or shrink this partition. In this way, you can install SUSE LINUX even if there is currently not enough space on the hard disk. This functionality is especially useful if the selected hard disk contains one Windows partition that covers the entire hard disk, which is often the case with preinstalled computers. If YaST sees that there is not enough space on the selected hard disk, but that space could be made available by deleting or shrinking a Windows parition, it will present a dialog in which to choose one of these two options.

If you select 'Delete Windows completely', the Windows partition will be marked for deletion, and the space will be used for the installation of SUSE LINUX.
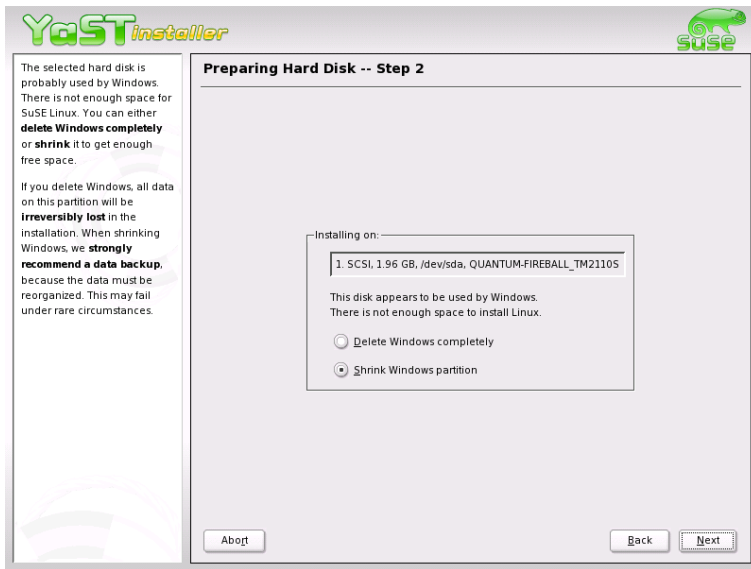
Figure 2.8: *Possible Options for Windows Partitions*

Caution

If you delete Windows, all data will be lost beyond recovery as soon as the formatting starts.

Caution

To shrink the Windows partition, interrupt the installation and boot Windows in order to prepare the partition from there. Although this step is not strictly required for FAT partitions, it speeds up the resizing process and also makes it safer. These steps are vital for NTFS partitions.

FAT file system In Windows, first run scandisk to make sure the FAT partition is free of lost file fragments and crosslinks. After that, run defrag to move files to the beginning of the partition. This will accelerate the resizing procedure in Linux.

> **Note**
>
> If you have optimized virtual memory settings for Windows in such a way that a contiguous swap file is used with the same initial (minimum) and maximum size limit, consider another step. With these Windows settings, the resizing might have the effect that the swap file is split into many small parts scattered all over the FAT partition. Also, the entire swap file would need to be moved during the resizing, which makes the process rather slow. It is therefore useful to unset these Windows optimizations for the time being and reenable them after the resizing has been completed.
>
> **Note**

NTFS file system In Windows, run scandisk and defrag to move the files to the beginning of the hard disk. In contrast to the FAT file system, this *must* be done in NTFS to enable resizing.

> **Note**
>
> If you operate your system with a permanent swap file on an NTFS file system, this file may be located at the end of the hard disk and remain there despite defrag. Therefore, it may be impossible to shrink the partition sufficiently. In this case, temporarily deactivate the swap file (the virtual memory in Windows). After the partition has been resized, reconfigure the virtual memory.
>
> **Note**

After these preparations, return to the Linux partitioning setup and select 'Shrink Windows Partition'. After a quick check of the partition, YaST opens a dialog with a suggestion for resizing the Windows partition.

The first bar graph shows how much disk space is currently occupied by Windows and how much space is still available. The second bar graph shows how the space would be distributed after the resizing, according to YaST's current proposal (Figure 2.9 on the facing page). Accept the proposed settings or use the slider to change the partition sizing (within certain limits).

If you leave this dialog by selecting 'Next', the settings will be stored and you will be taken back to the previous dialog. The actual resizing will take place later, before the hard disk is formatted.
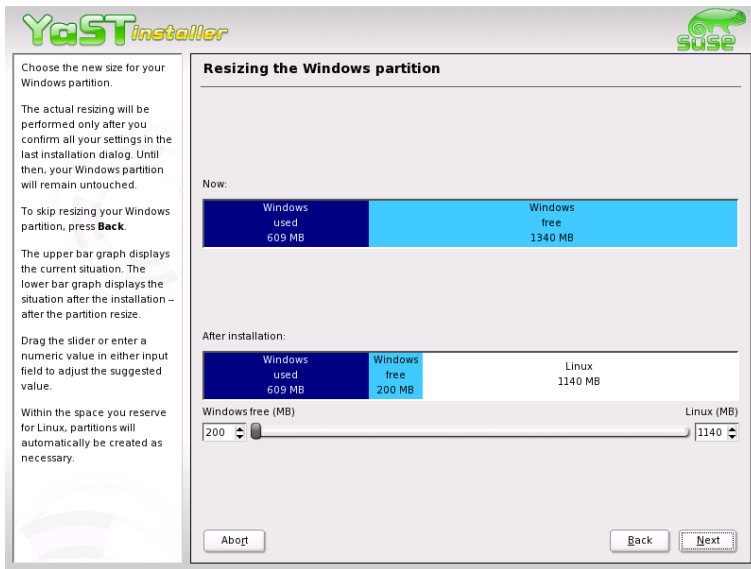
Figure 2.9: Resizing the Windows Partition

Note ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

Windows Systems Installed on NTFS Partitions

By default, the Windows versions NT, 2000, and XP use the NTFS file system. Unlike FAT file systems, NTFS file systems can (currently) only be read from Linux. Therefore, you can read your Windows files from Linux, but you cannot edit them. If you want write access to your Windows data and do not need the NTFS file system, reinstall Windows on a FAT32 file system. In this case, you will have full access to your Windows data from SUSE LINUX.

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯ **Note** ⎯

2.5.5   Software

SUSE LINUX contains a number of software packages for various application purposes. As it would be burdensome to select the needed packages one by one, SUSE LINUX offers three system types with various instal-

lation scopes. Depending on the available disk space, YaST selects one of
these basic systems and displays it in the suggestion screen.

- Minimum System (only recommended for special purposes)

  This installs the operating system with various services without the
  graphical user interface. The machine can only be operated by way of
  the ASCII consoles. This system type is especially suitable for server
  applications requiring little direct user interaction.

- Minimum Graphical System (without KDE)

  If you do not want the KDE desktop or if the disk space is insuffi-
  cient, install this system type. The installed system includes an ele-
  mentary graphical user interface with terminal windows, but no real
  desktop with the usual functionality. You can use all programs that
  have their own graphical user interfaces (such as Netscape). No office
  programs are installed.

- Default System (with KDE and office package)

  This is the largest of all offered basic systems. It contains the KDE
  desktop together with most of the KDE programs and the office pro-
  grams. This is the most suitable system type for normal stand-alone
  machines. If possible, YaST selects this system type.

Click 'Software Selection' in the suggestion screen to open a dialog in
which to select one of the basic systems. To start the software installation
modules (package manager) and modify the installation scope, click 'De-
tailed Selection' (see Figure 2.10 on the next page).

Changing the Installation Scope

If you install the default system, there is usually no need to add or remove
individual packages. This basic system consists of a software selection that
meets most requirements without any changes. If you have specific needs,
modify this selection with the package manager. It offers various filter
criteria for determining a selection from the numerous packages in SUSE
LINUX.

The filter selection box is located at the top left under the menu bar. At
start-up, the 'Selections' filter is active. This filter groups the program pack-
ages by their application purpose, such as multimedia or office applica-
tions. The various groups of the Selections filter are listed under the filter
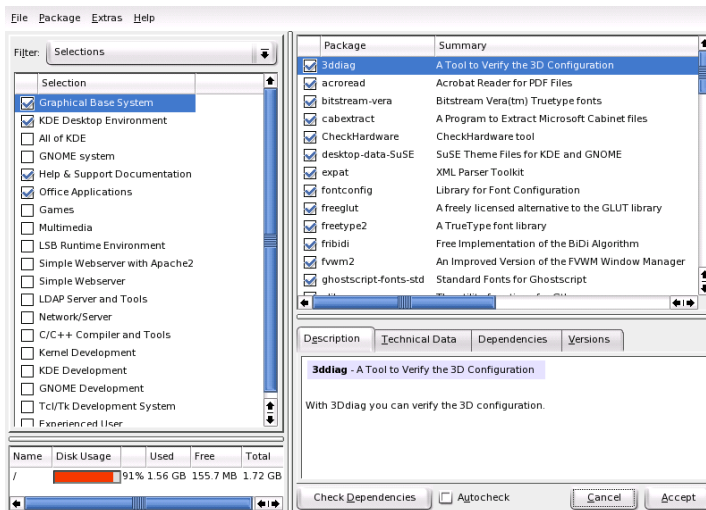
Figure 2.10: *Installing and Removing Software with the YaST Package Manager*

selection box. The packages included in the selected system type are prese-
lected. Click the respective check boxes to select or deselect entire selections
for installation.

The right part of the window displays a table listing the individual pack-
ages included in the current selection. The leftmost table column shows the
current status of each package. Two status flags are especially relevant for
the installation: *Install* (the box in front of the package name is checked)
and *Do Not Install* (the box is empty). To select or deselect individual soft-
ware packages, click the status box until the desired status is displayed.

Alternatively, right-click the package line to access a pop-up menu listing
various status options. However, the other status settings are not needed
for the installation.

Other Filters

Click the filter selection box to view the range of possible filters. The se-
lection according to 'Package Groups' can also be used for the installation.
This filter sorts the program packages by subjects in a tree structure to the
left. The more you expand the branches, the more specific the selection of
packages is and the fewer packages that are displayed in the list of associ-
ated packages to the right.

Use 'Search' to search for a specific package.

Package Dependencies and Conflicts

Instead of rewriting the same basic functions in each software package, programmers access the functions of other packages. For this reason, many packages require that other packages are installed for the programs to function. In rare cases, programs interfere with each other, causing conflicts. When selecting and deselecting software packages in this dialog, alerts about unresolved package dependencies or conflicts may be displayed. If you install SUSE LINUX for the first time or if you do not understand the alerts, read Section **??** on page ??, which provides detailed information about the operation of the package manager and a brief summary of the software organization in Linux.

> **Caution**
>
> The software preselected for installation is based on long-standing experience and is usually suitable for the needs of most newcomers and advanced home users. In general, there is no need to change anything here. However, if you decide to select or deselect any packages, you should be aware of the consequences. In particular, observe any warnings and avoid deselecting any packages of the base system.
>
> **Caution**

Exiting the Software Selection

When satisfied with your software selection and there are no more unresolved package dependencies or conflicts, click 'Accept' to apply your changes and exit the program. If this module is started in the installed system, the changes are applied immediately. During the installation, however, the changes are recorded internally and applied later when the actual installation starts.

2.5.6   Boot Configuration (Boot Loader Installation)

During the installation, YaST proposes a boot configuration for your system. Normally, you should leave these settings unchanged. However, if you need a custom setup, modify the proposal for your system.

One possibility is to configure the boot mechanism to rely on a special boot floppy. Although this has the disadvantage of requiring the boot floppy in

the drive for boot, it allows you to leave an existing boot mechanism untouched. This should not normally be necessary, however, because YaST can configure the boot loader to boot existing operating systems as well. Another possibility with the configuration is to change the location of the boot mechanism on the hard disk.

To change the boot configuration proposed by YaST, select 'Booting' to open a dialog in which to change many details of the boot mechanism.

> **Note**
>
> The boot method should only be changed by experienced computer users.
>
> **Note**

2.5.7 Time Zone

In this dialog, shown in Figure 2.11 on the next page, choose between `Local Time` and `UTC` under 'Hardware clock set to'. The selection depends on how the hardware (BIOS) clock is set on your machine. If it is set to `GMT`, which corresponds to UTC, your system can rely on SUSE LINUX to switch from standard time to daylight savings time and vice versa.

2.5.8 Language

The language was already selected at the beginning of the installation (see Section 2.3 on page 11. If you want to change this setting, you can do this here. Furthermore, advanced users can use the 'Details' button to set the language for the user `root`. The drop-down menu offers three options:

ctype The value of the variable `LC_CTYPE` in the file `/etc/sysconfig/language` is adopted for the user `root`. This sets the localization for language-specific function calls.

yes The user `root` has the same language settings as the local user.

no The language settings for the user `root` are not affected by the language selection.

Click 'OK' to complete the configuration or 'Discard' to undo your changes.
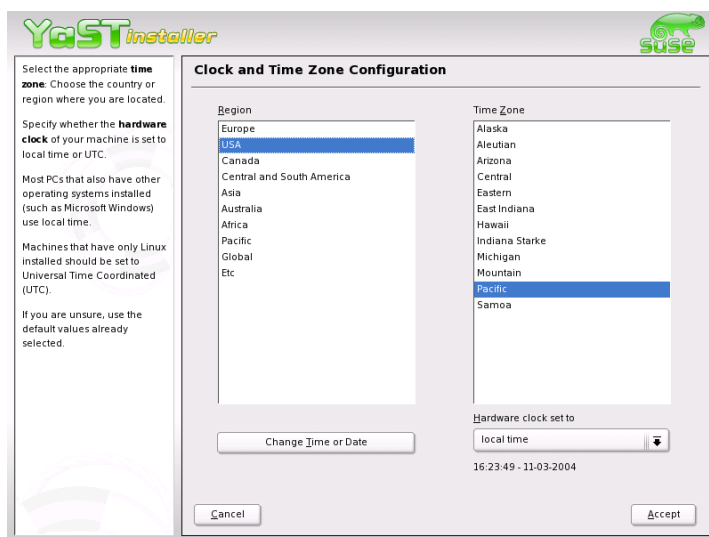
Figure 2.11: *Selecting the Time Zone*

2.5.9 Launching the Installation

When satisfied with the installation settings, click 'Next' to begin the installation. Confirm with 'Yes' in the green dialog that opens. Installation usually takes between fifteen and thirty minutes, depending on system performance and the software selected.

2.6 Finishing the Installation

After completing the basic system setup and the installation of all selected software packages, provide a password for the account of the system administrator (the `root` user). Then configure your Internet access and network connection, if available. With a working Internet connection, it is possible to update the system with security patches and software updates during installation. If desired, configure a name server for centralized user administration in a local network. Also configure any hardware devices, such as printers and scanners.

2.6.1 root Password

☞*root* is the name of the superuser, the administrator of the system. Unlike regular users, which may or may not have permission to do certain things on the system, `root` has unlimited power to do anything: change the system configuration, install programs, and set up new hardware. If users forget their passwords or have other problems with the system, `root` can help. The `root` account should only be used for system administration, maintenance, and repair. Logging in as `root` for daily work is rather risky: a single mistake could lead to many system files being irretrievably lost.

Figure 2.12 shows the relevant dialog. For verification purposes, the password for `root` must be entered twice. Do not forget the `root` password. It cannot be retrieved later.

Caution

The user `root` has all the permissions needed to make changes to the system. To carry out such tasks, the `root` password is required. You cannot carry out any administrative tasks without this password.

Caution
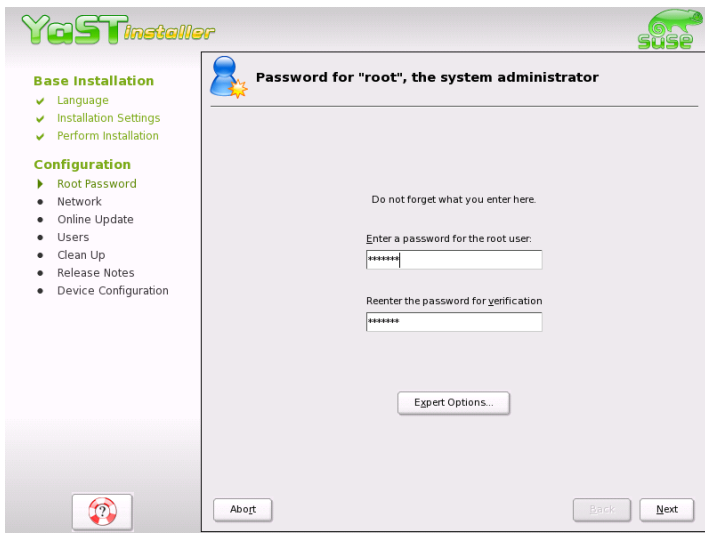
Figure 2.12: Setting the root Password

2.6.2 Network Configuration

In this step, configure network devices for a connection to the outside world. If you have these devices, such as network cards, modems, and ISDN or DSL hardware, it is a good idea to configure them now. An Internet connection allows YaST to retrieve any available SUSE LINUX updates.
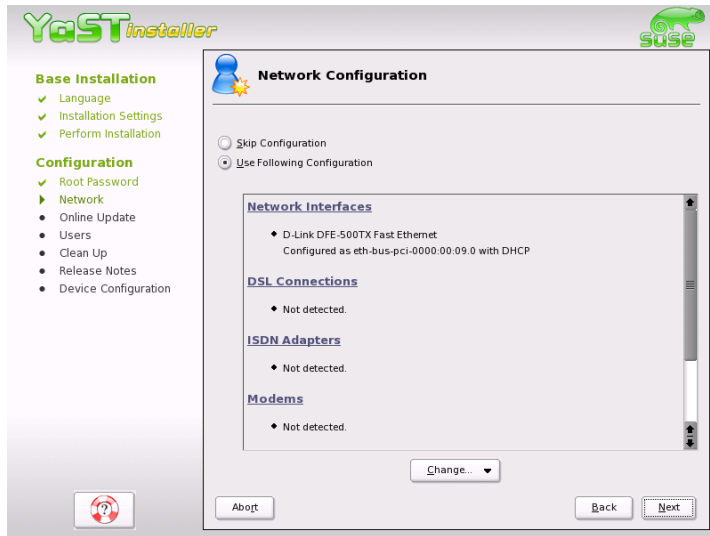
Figure 2.13: Configuring the Network Devices

Configure your network hardware here. Otherwise choose to 'Skip Network Setup' and confirm this with 'Continue'. The network hardware can also be configured after system installation has completed.

2.6.3 Testing the Internet Connection

If you configured an Internet connection, you can test it right now. For this purpose, YaST establishes a connection to the SUSE server and checks if any product updates are available for your version of SUSE LINUX. Also, the latest release notes are downloaded. Any available updates can be installed in the next step.

If you do not want to test the connection at this point, select 'Skip Test' then 'Next'. This also skips downloading product updates and release notes.
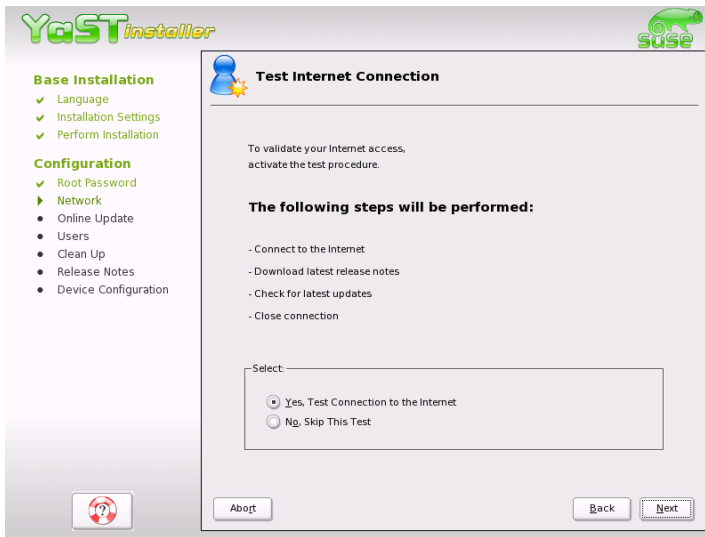
Figure 2.14: *Testing the Internet Connection*

2.6.4   Loading Software Updates

If YaST was able to connect to the SUSE servers, select whether to perform a YaST online update. If there are any patched packages available on the servers, you can download and install them now to fix known bugs or security issues.

Note

The download of updates might take quite some time, depending on the bandwidth of the Internet connection and on the size of the update files.

Note

To perform a software update immediately, select 'Perform Update Now' and click 'OK'. This opens YaST's online update dialog with a list of the available patches (if any), which can be selected and loaded. This kind of update can be performed at any time after the installation. If you prefer not to update now, select 'Skip Update' then click 'OK'.

2.6.5 Creating Local User Accounts

When user accounts are created locally, any data related to user accounts (name, login, password, and so on) is stored and managed on this host. Linux is an operating system that allows several users to work on the same system at the same time. Each user needs a ☞*user account* to log in to the system. By having user accounts, the system gains a lot in terms of security. Regular users cannot change or delete files needed for the system to work properly. Similarly, the personal data of a given user cannot be modified, viewed, or tampered with by other users. Each user can set up his own working environment and always find it unchanged when logging back in.
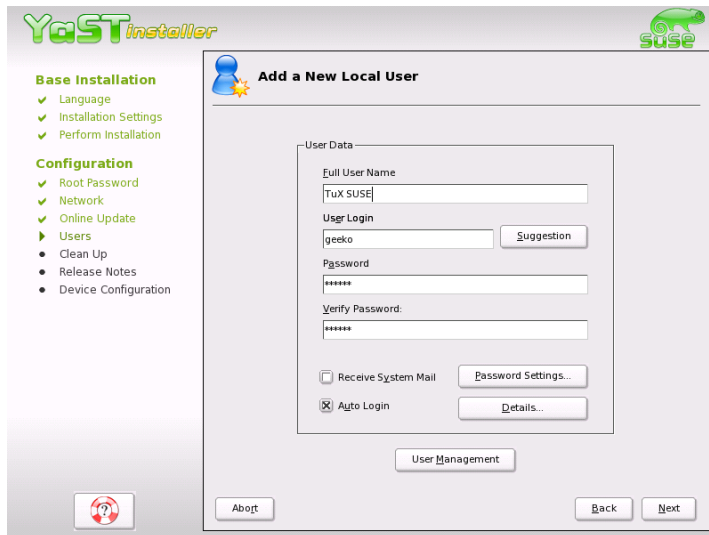
Figure 2.15: *Entering the User Name and Password*

A user account can be created using the dialog shown in Figure 2.15. After entering the first name and last name, specify the user name (login). If you cannot think of a suitable user name, click 'Suggestion' for the system to generate one automatically.

Finally, enter a password for the user. Reenter it for confirmation (to ensure that you did not type something else by mistake). The user name tells the system who a user is and the password is used to verify this identity.

Caution

Remember both your user name and the password because they are needed each time you log in to the system.

Caution

To provide effective security, a password should be between five and eight characters long. The maximum length for a password is 128 characters. However, if no special security modules are loaded, only the first eight characters are used to discern the password. Passwords are case-sensitive. Special characters like umlauts are not allowed. Other special characters (7-bit ASCII) and the digits 0 to 9 are allowed.

Two options are available for local users:

'Receive system messages via e-mail'
Checking this box sends the user messages created by the system services. These are usually only sent to `root`, the system administrator. This option is useful for the prominently-used user account, because it is highly recommended to log in as `root` only in special cases.

'Automatic login' This option is only available if KDE is used as the default desktop. It automatically logs the current user into the system when it starts. This is mainly useful if the computer is operated by only one user.

Note

No authentication is performed during system start-up with automatic login. Do not check this option for systems containing sensitive data or to which other people have access.

Note

2.7 Hardware Configuration

Configure the graphics card and, if desired, other hardware devices, such as the printer and the sound card. Just click a component to start its configuration. For the most part, YaST then detects and configures the devices automatically.

You may skip any peripheral devices and configure them later. However, you should configure the graphics card right away. Although the display
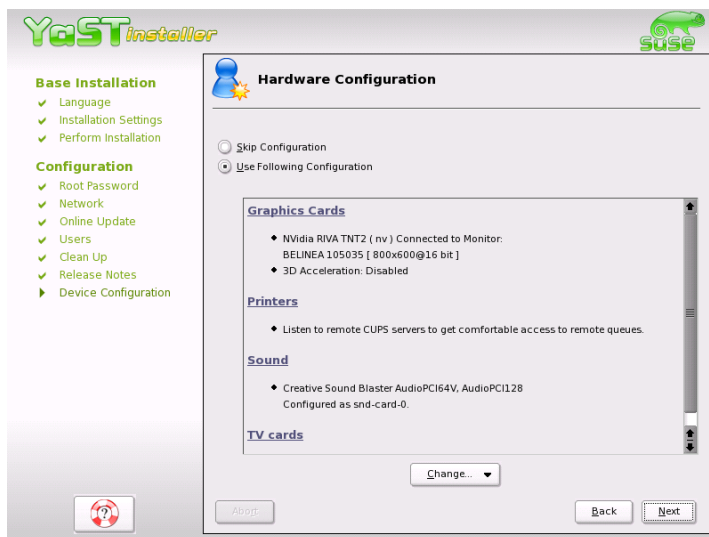
Figure 2.16: *Configuring the System Components*

settings as autoconfigured by YaST should be generally acceptable, most
users have very strong preferences as far as resolution, color depth, and
other graphics features are concerned. To change these settings, select 'X
Configuration'. When finished, click 'Finish Installation'.

After YaST has written the configuration data, you can finish the installa-
tion of the SUSE LINUX with 'Finish' in the final dialog.

2.8   Graphical Login

SUSE LINUX is now installed. You can start right away without passing
the login procedure if you checked automatic login in the local user ad-
ministration module. If not, the graphical ☞*Login* window shown in Fig-
ure 2.17 on the next page is displayed on your screen. Enter a previously
determined user name and password to log in to the system.
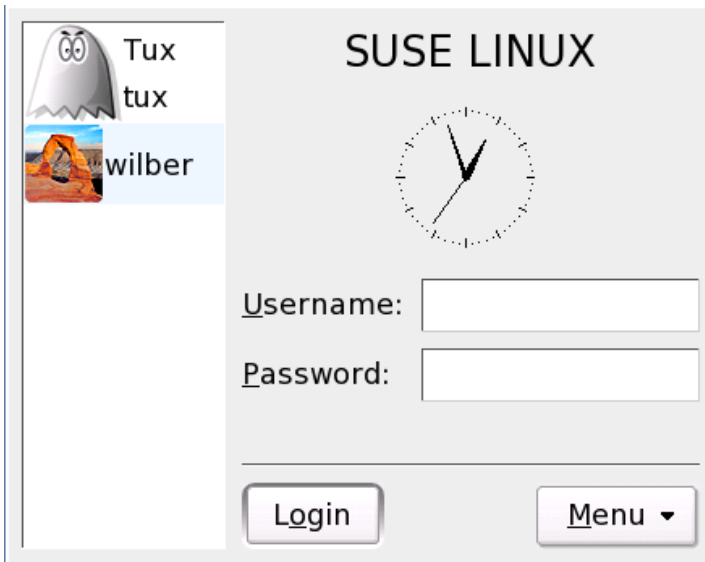
Figure 2.17: *The Login Screen*

YaST System Repair

Despite its robustness, the SUSE LINUX system can be damaged by configuration blunders or other "accidents". While this is quite unlikely when logged in as a regular user, the superuser `root` is allowed to change all system files and configuration, making it possible for him to accidentally cause damage. There are good chances of putting the system back on track with the YaST System Repair in such a case. It is impossible to correct all imaginable defects, but many of the common problems can be solved.

3.1 Starting YaST System Repair

Because it cannot be assumed that a damaged system can boot by itself and a running system cannot be easily repaired, the YaST System Repair utility is run from the SUSE LINUX installation CD or DVD. Follow the steps outlined in Chapter 2 on page 7 to get to the dialog page offering the various installation options and select 'Repair Installed System'. See Figure 3.1.
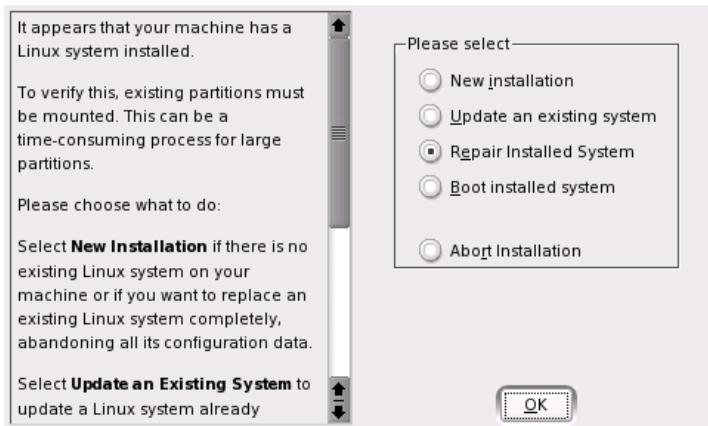
Figure 3.1: *Selecting the YaST System Repair Utility*

Note

Because the test and repair procedure is loaded from CD or DVD, it is essential to run it from an installation medium that *exactly* corresponds to your installed version of SUSE LINUX.

Note

In the next step, choose how the system repair should be performed. The following options are available and are described below:

- Automatic repair
- User-defined repair
- Expert tools

3.2 Automatic Repair

This method is best suited to restoring a damaged system with unknown cause. Selecting it starts an extensive analysis of the installed system, which will take quite some time due to the large amount of tests and examinations. The progress of the procedure is displayed at the bottom of the screen with two progress bars. The upper bar shows the progress of the currently running test. The lower bar shows the overall progress of the analysis process. The log window above allows tracking of the currently running activity and its test result. See Figure 3.2. The following main test runs are performed with every run. They contain, in turn, a number of individual subtests.
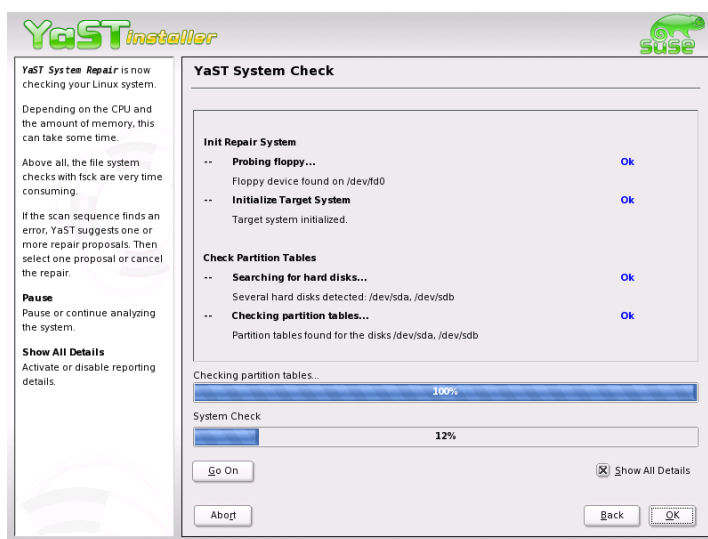
Figure 3.2: *Automatic Repair Mode*

Partition tables of all hard disks   The validity and coherence of the partition tables of all detected hard disks are checked.

Swap partitions   The swap partitions of the installed system are detected, tested, and offered for activation where applicable. The offer should be accepted for the sake of a higher system repair speed.

File systems   All detected file systems are subjected to a file system–specific check.

Entries in the file `/etc/fstab`   The entries in the file are checked for completeness and consistence. All valid partitions are mounted.

Boot loader configuration   The boot loader configuration of the installed system (GRUB or LILO) is checked for completeness and coherence. Boot and root devices are examined and the availability of the initrd modules is checked.

Package database   This checks whether all packages necessary for the operation of a minimal installation are present. While it is optionally possible to also analyze the base packages, this takes a long time because of their vast number.

Whenever an error is encountered, the procedure is stopped and a dialog opens, offering details and possible solutions. It is not possible to describe all these cases. Read the notifications on the screen carefully and choose the desired action from the list options. It is also possible to decline the offered repair action in cases of doubt. The system remains unaltered in this aspect and no repair is ever performed automatically and without prompting the user.

The KDE Desktop

KDE is the default desktop in a standard installation of SUSE LINUX. It is easy to use and highly configurable. The following sections introduce the basic desktop and customization of the desktop. Konqueror is essential for file management. A number of additional applications are also described.

4.1 Desktop Components

The graphical desktop environment should not pose any problems for former Windows or Macintosh users. The main components are the icons on the desktop and the panel at the bottom of the screen. The mouse is your most important tool. Click a symbol or an icon once to start the associated program or the file manager Konqueror. If you right-click an icon, different menus appear, depending on the program. As well as the icons, there are two desktop menus.

4.1.1 The Desktop Menus

If you middle-click the desktop (if your mouse only has two buttons, press both buttons at the same time), a window and desktop management menu are displayed. If you keep the mouse button pressed, select a menu item directly. Alternatively, release the mouse button and click the respective menu item.

Unclutter Windows If you have several windows on your desktop, they are placed next to each other and aligned with the top left corner.

Cascade Windows Starting from the top left corner, the windows on the desktop are placed on top of each other in such a way that only the top and left borders of the lower windows are visible.

Desktop 1 Desktop 1 is your default desktop. All open windows are listed under this menu item. Click windows to move them to the foreground.

additional desktop You can use additional virtual desktops. Switch to another desktop with the menu or the panel. All functions are available on all desktops. This limits the number of programs and associated windows that need to be arranged on one desktop. These virtual desktops resemble additional desks in your office.

If you right-click the desktop, a more complex menu is displayed, allowing you to customize your desktop.

Create New Enables creation of new elements, such as directories, files, or URLs, on the desktop. A list of possible elements is provided for selection in a submenu.

Bookmarks This item opens the bookmark editor KEditBookmarks. With it, create, group, change, or delete bookmarks. The browser and file manager Konqueror can access these bookmarks.

Undo This option allows you to undo the last action. For example, if you just created a new directory on the desktop, clicking this item reverts the creation so the directory disappears.

Paste To have a desktop icon for a folder or document, copy the icon from the file manager by right-clicking and selecting 'Copy' then moving the mouse to the desired location on the desktop. Right-click again and select 'Paste'. The icon is now available on your desktop and can be moved around by dragging it with the left mouse button pressed.

Icons Rearranges the symbols on the desktop. You can also change the order of the icons.

Windows The windows on the desktop are either placed on top of each other at the top left corner or next to each other.

Configure Desktop This menu item starts a configuration dialog with which to configure the appearance of the desktop. Details about the configuration of the desktop are provided in Section 4.2 on page 49.

Help Use this submenu to open the KDE manual or write a bug report to the developers via the KDE web site. You can also start an information page about KDE.

Lock Screen If you leave your workstation and do not log out, you should use this function to prevent others from gaining access to your files. Depending on the setting, the screen either turns black or a screensaver starts. To continue using the computer, enter your password.

Logout User Log out from your system if you are not going to use the system for some time.

4.1.2 The Trash Bin

The trash bin is a directory for files marked for deletion. Drag icons from the file manager or the desktop to the trash bin icon by keeping the left mouse button pressed then release to drop them there. Alternatively, right-click an icon and select 'Move to Trash' from the menu. Click the trash bin icon to view its contents. You can retrieve an item from the trash if desired.

Files removed with 'Delete' are not moved to the trash bin, but deleted completely. To delete the files in the trash bin completely, right-click the trash bin icon and select 'Empty Trash Bin'.

4.1.3   CD-ROM, DVD-ROM, and Floppy Disks

If you click the floppy disk icon when a floppy disk is inserted, the file manager starts and displays the content of the floppy disk. Display a context menu with various options by right-clicking the individual icons on the floppy disk. It is also possible to move the icon to a different location, such as the desktop or your home directory, by simply keeping the left mouse button pressed and dragging it to the appropriate icon. You will be asked whether you want to move or copy the file or create a link. You can also copy or move files from your home directory to the floppy disk.

Right-click the floppy disk icon to access the context menu. 'Unmount' is a very important option. Be sure to unmount the drive before removing a floppy disk from the drive, as this is necessary to trigger the actual writing of the data to the floppy disk.

The handling of CDs and DVDs is similar, with the only difference that these media are not writable. Nevertheless, you must unmount CD and DVD drives, because otherwise you will not be able to eject the CD. You can also select 'Eject', which causes the medium to be unmounted and ejected. Both methods only work if the CD or DVD is no longer accessed and any file manager window displaying the content of the CD or DVD has been closed.

4.1.4   The Printer Icon

Click the printer icon on the desktop to start KPrinter. This program enables you to adjust a number of settings and send print jobs directly. The upper part of the main window, like that in Figure 4.1 on the facing page, shows the selected printer and allows selection of a different printer. Click the black arrow next to the printer name to display a list of all available printers and select the desired printer.

To configure the selected printer, click 'Properties'. A configuration dialog like that shown in Figure 4.2 on page 46 opens, enabling you to change the paper format (e.g., from A4 to letter) or change between multiple paper trays. The latter is especially useful if one of the trays contains letterhead paper and another contains plain white paper.
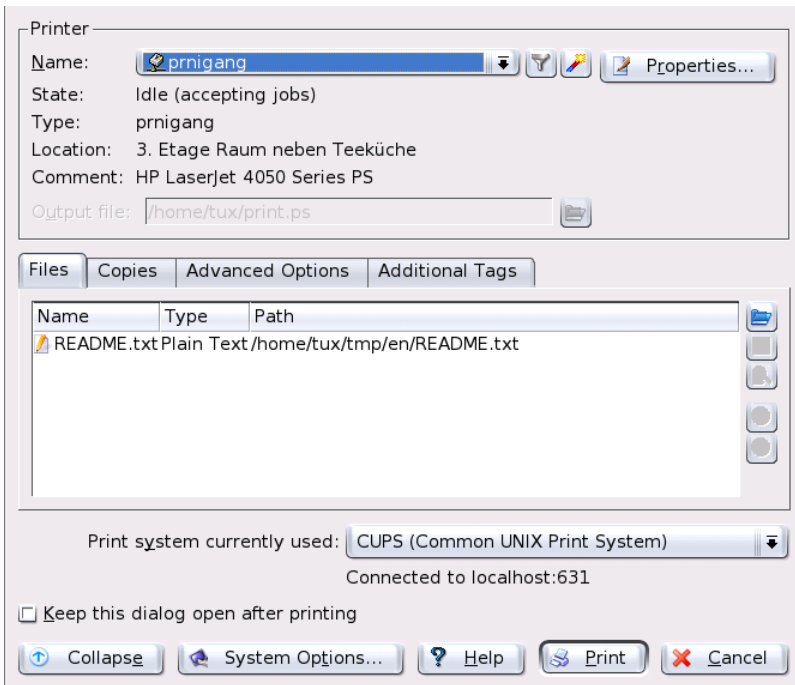
Figure 4.1: *The Main Window of KPrinter*

Under 'Orientation', choose between 'Portrait' and 'Landscape'. To the right of 'Orientation', specify the settings for two-sided printing. If 'None' is selected, only one page is printed per sheet. If you click the circle preceding 'Long side', the front and back will be printed like in a book. With 'Short side', the back is printed reversely and you have to turn the sheet up to view the text correctly. Under 'Start/End', mark your document with headlines and subtitles, such as "confidential" or "secret". Under 'Pages per Sheet', select to print two or four pages on one sheet. For this purpose, the pages are downsized accordingly. If you click 'Save', your settings are adopted for other print jobs, too. However, if you click 'OK', the settings only apply to the current job. If you terminate the dialog with 'Cancel', all changes are discarded.

After making all settings, click 'Expand'. The second part of the window now becomes visible. Click the blue folder icon. By default, your home directory is displayed. Select a file and confirm with 'OK'. You can also se-
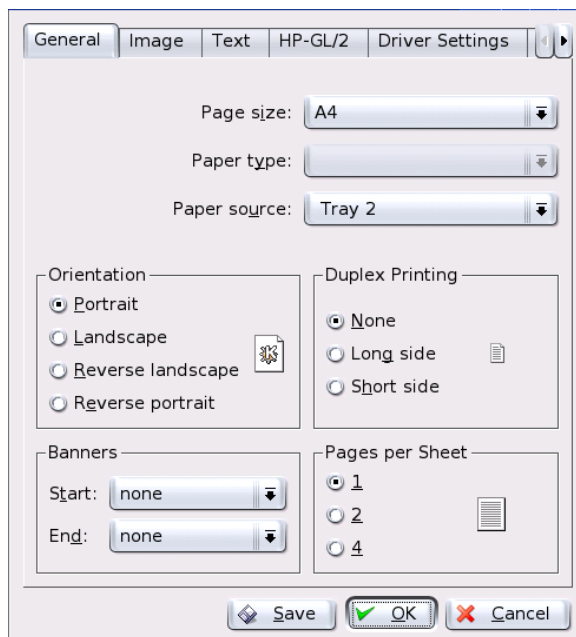
Figure 4.2: *Settings in KPrinter*

lect the file by double-clicking it. The respective file then appears in the overview of the main window, together with the name, type, and path specification. Now click 'Print' to send the job to the printer. The job is placed in the queue and can be monitored with KJobViewer. On the other hand, if you click the document, two additional buttons become active to the right. Use the X button to remove the document from the selection or use the magnifying glass icon to display, edit, and save the file with Kwrite or OpenOffice.org (depending on the document type). Afterwards, simply close the editing program and click 'Print' in the KPrinter dialog. Your changes are then adopted for printing.

All KDE applications use KPrinter for printing. For example, if you click the printer icon in KWrite, the KPrinter dialog appears. The file to print is already preselected.

4.1.5 The Panel

The panel at the lower edge of the screen consists of several areas. By default, the icon for the main menu is located to the far left. Other icons are lined up alongside it. The house icon provides quick access to your home directory with all subdirectories. The other icons start applications, such as OpenOffice.org, K-Mail, and the web browser Konqueror, if these programs were installed.

Next to these icons are the numbered buttons with which to switch desktops. These multiple desktops enable you to organize your work if you use many programs simultaneously, as if you had several desks for various tasks.

The taskbar is located next to the virtual desktops. All started applications are displayed in the taskbar. If you click a window title in the taskbar, the application is moved to the foreground. If it is already in the foreground, clicking minimizes the application. If you click it again, it reopens. Next to the taskbar, find applets, such as the clipboard Klipper, SuSEwatcher, and any other applets you have started. The clock helps you keep track of the time.

If you right-click an empty space in the panel, a menu providing the usual help and configuration options for the panel is displayed. Use the menu to change the size of the panel and add and remove applications. To add an application, search for the respective application in the menu and select it. Remove applications or applets by right-clicking the corresponding icon and selecting 'Remove' from the displayed menu.

4.1.6 The Main Menu

Access the main menu by means of the icon to the far left of the panel. By default, this menu contains entries for logging out from the system, locking the screen, executing commands, and starting the quick browser and the bookmark manager. Use the file manager to display your home directory, search for files, or start the Control Center for the purpose of customizing the desktop. The other menu entries allow you to start a variety of programs sorted by subjects. The following section provides information about selected functions that you can start by means of the main menu. Detailed information about the Control Center is available in Section 4.2 on page 49.

Logout User   You can log out from the system by means of this menu item. However, first you will be asked what should happen after the

logout. If you select the 'Login as different user', the login screen is displayed, allowing you or another user to log in to the system. You can also turn off or restart the computer. Confirm your selection with 'OK' or remain logged in by clicking 'Cancel'.

Lock Screen   If you leave your workstation, you can blacken your screen or start a screensaver. To restore the session view, enter your normal login password. In this way, make sure no one reads or manipulates your documents or e-mail messages.

Start New Session   To start a second session with a graphical user interface on your machine, select 'Start New Session' from the main menu. Your current session remains active while you are taken to the login screen. Log in. You can also start another window manager. Access the first session by pressing Ctrl + Alt + F7. Press F8 instead of F7 to access the new session. Additional sessions can be accessed by pressing Ctrl + Alt + F9 to F12.

Run Command   Enter a command in the dialog that opens. In this way, easily start applications whose name you know without having to navigate through the menu.

Bookmarks   By way of this menu, start the bookmark editor with 'Edit Bookmarks' to manage your bookmarks. If you select a bookmark from the menu, the browser starts and loads the desired URL.

Search   'Search' starts the program KFind. Use 'Help' to access the program manual, which provides information about all details. If you forget where a certain file is, enter it in the 'Named' field and start a search in your home directory. This default setting can be changed to a different directory, such as `Documents`, by clicking 'Browse'. If you are not sure what the exact file name is, use wild cards. If you can remember that the file name contains the character string `blubb`, simply enter `*blubb*`. This tells the program that `blubb` can be preceded and followed by any characters.Use the tabs at the top left of the window to change to 'Contents' and 'Properties'. In 'Contents', use 'File type' to limit the search to files or directories or search for the content of the document. If you enter a keyword of the document to find in 'Containing text', all texts containing this word are displayed. Click the desired file to load it directly. With 'Save as...', save the file under a new name in a different directory. The original file is retained.Search criteria can be specified in the 'Properties' dialog. You can limit your search to files that were modified or created recently or to files that belong to a specific user or group.

4.1.7 The Windows

The windows of all KDE applications have the same structure. The title bar features four buttons in the right corner. The question mark provides access to context help. If you click the question mark then an icon of the application, a short help text is displayed. The button with the black dash minimizes the window. A minimized window is placed in the panel but not terminated. Display it and continue to use it by clicking the icon in the taskbar. The button with the square maximizes the window over the entire screen area. Another click on this symbol restores the window to its former size. The X closes the window and terminates the application.

Windows can be moved, enlarged, or downsized. Click the title bar and keep the left mouse button pressed to move the window on your screen. If you right-click the top bar, a configuration menu is displayed. To change the size of the window, move the mouse pointer along one of the four edges of the window until the mouse pointer symbol changes to a double arrow. Then keep the left mouse button pressed while moving this edge. Another possibility is to move the mouse pointer to one of the four corners and resize two edges of the window at the same time.

4.2 Settings

The KDE desktop can be customized according to your preferences and needs. 'Control Center' in the main menu opens the configuration dialog for your KDE desktop. The following section introduces a number of modules.

4.2.1 Peripherals

This opens the configuration dialogs for the mouse, keyboard, and printer administration.

Keyboard

Keyboard repeat   Keeping a key pressed causes the associated character to be printed repeatedly as long as the key is pressed. The option is activated by default.

Key click volume   If you want to hear a sound when a key is clicked, activate this option and adjust the volume with the slider.

Use sticky keys, slow keys, or bounce keys
These options are the same as those listed in Section 4.2.5 on page 57, where they are described in detail.

NumLock on KDE startup　Here, determine whether the number pad of your keyboard should be active when KDE is started.

Mouse

The mouse configuration comprises three tabs:'General', 'Advanced', and 'Mouse Navigation'. The configuration options of the 'General' tab are:

Button Mapping　Here, specify right-handed or left-handed use of your mouse.

Icons　Determine how the system should react to clicks and double-clicks. The default setting for the KDE desktop is a single click for opening files or folders and a mouse pointer that changes its appearance when it is moved over icons. If you want icons to be selected automatically in addition to the single click, activate the respective option and set the delay for this selection.

To use double-click for opening files and folders, select 'Double-click to open files and folders (select icons on first click)'. Finally, set the size and color of the pointer and the visual feedback on activation.

Configuration options of the 'Advanced' tab:

Pointer Acceleration and Pointer Threshold
The pointer acceleration defines the relation between the movement speed of the input device (mouse) and the speed of the pointer on the screen. The higher the selected factor is, the more difficult it is to control the screen pointer. The threshold (in pixels) specifies the distance the pointer must cover before the indicated pointer acceleration is activated. In this way, control the mouse pointer easily when covering small distances and cover large distances on the screen with small movements.

Double Click Interval　Here, set the maximum interval between two mouse clicks that should still be interpreted as a double-click.

Drag Start Time and Drag Start Distance
The object selected with a click is moved if you move it by the distance in pixels specified in 'Drag start distance' within the period specified in 'Drag start time'.

Mouse Wheel Scrolls By   If you have a wheel mouse, specify the number of lines the image should scroll per wheel "tooth".

To be able to navigate the mouse pointer with the arrow keys of the number pad, activate this function under 'Mouse Navigation' and customize the parameters according to your needs.

Printers

The printer administration module mainly consists of three parts. The top frame lists all printers available in the network. The center part features a configuration and information zone comprising four tabs. The lower part indicates the current print system type. The following description only covers the configuration part.

> ┌─ **Note** ─────────────────
>
> The configuration options relevant for your daily work with the system can be accessed under 'Jobs' and 'Instances'. 'Information' and 'Properties' mainly provide information or are used for system administration.
>
> ─────────────────── **Note** ─┘

Depending on which printer is currently selected in the overview, view and modify status and model information and configuration options in the following four tabs at the center of the dialog window:

Information   This tab provides general and unmodifiable information about the printer, such as the printer type, its status, location, and designation.

Jobs   This tab corresponds to KJobViewer, described in Section 4.4.5 on page 66.

Properties   All settings related to the printer are available here: general information, drivers, interfaces, separator pages, quotas, and user accesses.

Instances   Depending on the document type, you may have diverse requirements for the printouts (page format, duplex printing, orientation, print quality, and banners). Combine the characteristic settings for each type in *instances*. To create a new profile, select 'New' and enter a name for the profile. Click 'Settings...' to open a configuration dialog in which to specify these settings. To save the settings and exit

the dialog, click 'OK'. To define one of your custom profiles as the default for this printer, click 'Set as Default'. Your default profile is used when printing from applications. You can only switch between the individual profiles in the printer administration module.

4.2.2 Desktop

Under 'Appearance', set the standard font, font size, background colors, and underlining on the desktop. Under 'Window Behavior', configure the behavior of the windows and their activation. For example, set the focus to follow the mouse. In this case, you do not need to click a window to activate it.

The taskbar in the panel displays the applications currently started on your system. In this module, determine to what extent started programs and virtual desktops should be displayed in the taskbar and which actions should be associated with mouse clicks in the taskbar.

Under 'Panels', set the position and size of the panels and configure their hiding mode. You can also place additional menus in the panel. If the standard number of virtual desktops is not sufficient, set up additional virtual desktops under 'Multiple Desktops' and assign them names.

4.2.3 Sound & Multimedia

Here, perform all settings for the playback of audio CDs and for the sound system. Under 'System Bell', switch from system notification to a system bell and specify the volume, pitch, and duration of the bell.

By default, system notifications are used. Use this module to determine how the system should inform you in the event of a problem, when a task is performed, or if an event requiring your immediate attention occurs.

In the upper part of the dialog, select the application for which to configure the system notifications. As soon as you select a program, all events the application can send to the user are listed in the lower window. Determine the notification type for each notification in the 'Actions' dialog.

The standard view of the system notification dialog only offers the activation of a 'Play a sound' check box for audible notification. Click 'More Options' to access other action modes. You can log the notification to a file, execute a program, or show the message in a pop-up window. In the lower part of the dialog under 'Quick Controls', globally activate or deactivate the actions for all programs.

4.2.4 Appearance & Themes

This item features all fine tuning options for the appearance of your desktop.

Screen saver

The module for selecting and configuring the screensaver consists of three parts. Select a suitable screensaver from the list to the left. The preview to the right shows how the selected program looks. Use 'Setup' and 'Test' to test the screensaver in the running system and configure it.

Start screen saver automatically   For the screensaver to be activated automatically, select this check box and specify the time (in minutes) after which the screensaver should be activated.

Require password to stop screen saver
   The screensaver can block your workstation and require a password for the release.

Priority   Use the slider to set the priority of the screensaver in relation to other processes. If you use a graphically complicated screensaver that generates a high processor load, set the priority higher to achieve a smooth display quality. In this case, the priority of other processes is reduced accordingly. However, if you frequently let your machine work while you do other things, you should refrain from running a complex screensaver with a high priority.

Colors

Use this module to manage and edit color schemes for your desktop. Select one of the many existing schemes. The preview window displays all desktop elements in the defined colors. To change the color of one or several widgets, select the name of the widget from the drop-down menu under 'Widget Color' and click the color bar below to choose a suitable color in the color editor. Finally, adjust the contrast settings and save the modified scheme under a name of your choice. To apply this scheme globally, activate 'Apply colors to non-KDE applications'.

Window Decorations

Select a decoration style for your application windows from the list under the 'General' tab. Click 'Apply' to test the selected style. To position or

move individual elements of the title bar, activate 'Use custom titlebar button positions' and rearrange the elements under the 'Buttons' tab. If additional configuration options are available for the selected style, access these under the 'Configure' tab.

Background

Determine a background for your desktop. By default, your modifications are applied to all virtual desktops. To configure the backgrounds separately for the individual virtual desktops, deactivate 'Common Background'. The effect of your configuration can be seen in the preview at the top right of the dialog window.

The background colors can be selected under the 'Background' tab. To modify the color components, click the color bar next to 'Color 1' or 'Color 2' to open a color editor. Here, change the color settings as desired or use the pipette to adopt a color from any desktop element or a loaded image or web page. Select special gradient effects under 'Mode'.

To use an image as a background for one or several backgrounds, activate 'Single Wallpaper'. Then select the scaling mode or the position of the wallpaper on your desktop and designate a suitable wallpaper with the drop-down menu or the 'Browse...' button. Alternatively, drag and drop image files from your file manager (see Section 4.3 on page 58) or the desktop to the preview image. For wallpaper variety, activate 'Multiple Wallpapers' and proceed with the further configuration using 'Setup Multiple...'.

The 'Advanced' tab features some special settings that usually do not need to modified.

Fonts

All fonts and font attributes used on the desktop can be configured here. Click 'Choose...' then specify your settings in the dialog that opens. By default, antialiasing is activated for all fonts. To deactivate or customize antialiasing, select the respective check boxes.

> **Note**
>
> Changes to the antialiasing settings are only applied to newly-started programs. Programs already open are not affected by the changes.
>
> **Note**

Style

Here, select the style for all widgets (elements of the graphical interface) in KDE applications. The configuration contains three tabs. Select the style under 'Style', using the preview in the lower part of the window. Use 'Effects' to configure various GUI effects and transparency types, if supported by the respective style.

4.2.5 Regional & Accessibility

Country/Region & Language

The settings in this module only apply to KDE applications. Other applications, such as OpenOffice.org, may need to be configured separately. All regional system settings can be configured under five tabs.

Locale Use the drop-down menu to select the desired country from the list. Settings, such as the language, numbers, currency, time, and date are automatically set to suitable values. A preview of all current regional settings is displayed in the lower part of the dialog. For example, to use the regional settings for the US but use Spanish as the system language, click 'Add Language' to select this language and add it to the list of available system languages. To remove a language, mark it in the list and click 'Remove Language'.

Numbers To use different number settings than the default settings associated with the country selected under 'Locale', configure the decimal symbol, thousands separator, positive sign, and negative sign in this dialog. The decimal symbol and the thousands separator for currencies are configured separately under the 'Money' tab. The default setting on a US system is "." for the decimal symbol, an optional "," for the thousands separator, no entry for the positive sign, and "-" for the representation of negative numbers.

Money Configure all currency-related settings that should differ from the default settings for the selected system language in this dialog. For example, on a US system, the currency symbol is "$", the decimal symbol is ".", thousands are separated with a ",", and the number of fraction digits is "2". The position of the currency symbol and the prefix for positive and negative amounts is arranged in such a way that the currency symbol precedes the prefix and the amount.

Time & Date   Here, enter the time format, the date format, the short date format, and the first day of the week. A detailed explanation is displayed if you click the "?" symbol in the title bar then the respective menu item.

Other   This tab features the setting for the default paper format and measurements. On a US system, the default paper format is "US Letter" and the imperial system is used for measurements.

Keyboard Shortcuts

This module comprises two tabs. Use the 'Shortcut Schemes' tab to select an existing layout or create new keyboard layout schemes. The 'Modifier Keys' tab provides an overview of the special keys available on your keyboard.

Your system offers a number of predefined shortcuts for specific tasks arranged in schemes. Use the 'Shortcut Schemes' tab to manage all shortcuts on your system. By default, the following schemes are available on your system:

- Windows Scheme (With Win Key)

- Mac Scheme

- KDE Default for 3 Modifier Keys

- KDE Default for 4 Modifier Keys

- Windows Scheme (Without Win Key)

- Unix Scheme

To change the scheme used on your system, select one of the listed schemes and adopt it globally ('Global Shortcuts', 'Shortcut Sequences', and 'Application Shortcuts') or assign shortcuts to individual actions and save them as a custom scheme.

To create a new shortcut for an action or modify an existing shortcut, select the tab for the respective area (e.g., 'Global Shortcuts') and click the action to assign (e.g., 'Show Taskmanager'). The section 'Shortcut for Selected Action' is then activated in the lower part of the dialog. Three radio buttons offer the basic configuration options none, default, and custom.

Existing schemes are write-protected, allowing restoration of the default values at any time. Save your own modifications by clicking 'Save...' at the top right and entering a name for your custom scheme. The new scheme is then listed in the selection menu.

> **Note** ————
>
> Under 'Application Shortcuts', you can only configure standard actions available in all applications. Program-specific shortcuts must be configured in the program itself via 'Settings' -> 'Configure Shortcuts'.
>
> ———— **Note** ⌐

Accessibility

The settings in this module facilitate the access to the system for users with hearing problems or motor disorders. This module contains the 'Bell' and 'Keyboard' tabs.

Audible bell   System bells can be communicated to the user in a visible or in an audible form. The default setting is the audible variant with 'Use System bell'. To configure a specific sound, activate 'Use customized bell' and use 'Browse...' to select a suitable sound from the list.

Visible bell   For system bells to be communicated visually, activate 'Use visible bell'. If no other modifications are performed, the screen is inverted when a system bell rings ('Invert screen' is activated by default). The duration of the visual bell can be adjusted with the slider. Instead of the inversion, the screen can be set flash. To do this, activate 'Flash screen' and select a suitable color in the color editor by clicking the color bar.

Sticky Keys   Some shortcuts require a key to be held down (this is the case with (Alt), (Ctrl), and (Shift)) while the second part of the shortcut is entered. If sticky keys are used, the system considers these keys to be pressed continuously even if they are only pressed once.

Slow Keys   Here, determine if and to what extent the system delays the output of characters on the screen when a key is pressed. The longer the interval adjusted with the slider is, the longer a key can be pressed without triggering a repeated output of the respective character on the screen.

Bounce Keys   If you activate this option, pressing a key twice is only interpreted as two characters if the interval selected with the slider has elapsed. If a key is pressed twice inadvertently, this will be ignored.

4.3   Konqueror as a File Manager

Konqueror is a unified web browser, file manager, document viewer, and image viewer. The following paragraphs cover the use of Konqueror for file management. Start Konqueror by clicking the house icon in the panel. The contents of your home directory are then displayed.

The file manager window consists of the menu bar at the top, the toolbar, and the location bar. The lower part of the window is split vertically into the navigation panel and the main window, which displays the contents.
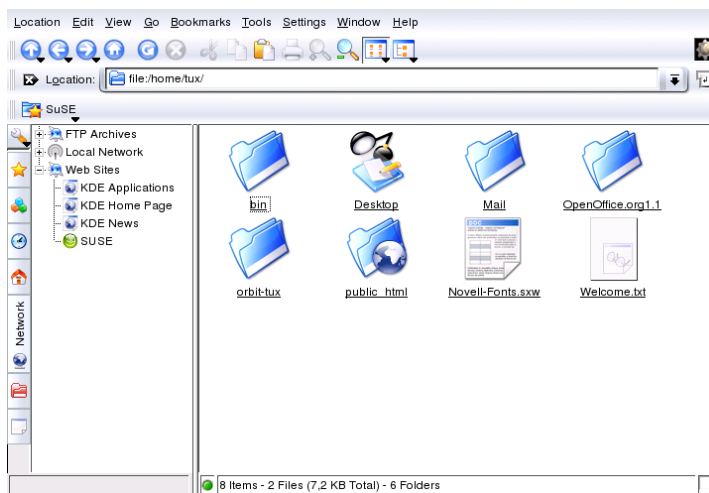
Figure 4.3: The File Manager Konqueror

4.3.1   The Konqueror Menu

Location   Using the 'Location' menu, open additional Konqueror windows. If you click 'New Window', your home directory is displayed in a new window. 'Duplicate Window' produces a second window with the same content. You can also send a file or a link (using the browser function) by e-mail. If you click one of these menu items, the KMail composer opens. Specify the recipient and compose a text. Depending on the selected item, the file is already attached or the link

is displayed in the e-mail body. You can also print directly from this menu.

Edit Most items under 'Edit' only become active if you select an object in the main window. Standard editing functions are available. The 'Shred' function destroys the data permanently. Create new directories and files or change file properties, such as the file permissions. Grant or deny the user, a group, or all users read, write, and execute permissions. In the main window, one or several files can be selected by moving the mouse pointer over them while keeping the left mouse button pressed or by using the selection functions in the 'Edit' menu.

View Use the 'View' menu to change views. If a directory is very full, the text view or the tree view may be more efficient. To view HTML pages, activate 'Use index.html'. With 'Lock to Current Location', stop animated images and, with 'Unlock View', resume the animation. 'Icon Size', 'Sort', 'Preview', 'Show Hidden Files', and 'Folder Icons Reflect Contents' control the icons shown in the main window. Also use this menu to choose a color or image for the background.

Go The 'Go' menu contains the navigation functions. However, you can access these functions more quickly in the toolbar. One interesting feature is available under this menu: the list of recently viewed directories, which can be selected and displayed.

Bookmarks Bookmarks can be Internet addresses (URL) or paths to specific files or directories on your host. If you select 'Add Bookmark', the current content of the location bar is saved as a bookmark. To access this location, simply click this bookmark. For practical reasons, arrange bookmarks in folders. The SuSE folder already exists. This folder contains bookmarks of important SUSE web pages. 'Edit Bookmarks' opens the bookmark editor in which to perform tasks like deleting obsolete bookmarks, renaming bookmarks, and moving bookmarks from one folder to another.

Settings Use the 'Settings' menu to configure the look and feel of Konqueror. Hide the menu bar by deactivating 'Display Menubar'. Press $\boxed{Ctrl}$ + $\boxed{M}$ to display it again. Under 'Toolbars', hide or display the main toolbar, an extra toolbar, the location bar, and the bookmark list. If you changed the view of a specific directory, save these changes under 'View Properties Saved in Directory' or 'Remove Directory Properties'. Using view profiles, change the view by means of predefined patterns. The default setting is 'File Management'. Under 'Load View Profile', switch to 'File Preview', 'Midnight Commander', or 'Web

Browsing'. For example, when you click the K̲onqueror icon in the panel, the web browser profile is displayed. Specify individual keyboard shortcuts with 'Configure Shortcuts', customize the toolbar with 'Configure Toolbars', and configure global settings for the file manager with 'Configure Konqueror'.

Window In the 'Window' menu, you can split the main window horizontally and vertically. With 'Remove Active View', remove the split. 'New Tab' creates an empty window in the Konqueror window. Switch between these windows with tabs. With 'Duplicate Current Tab', generate a second identical window that can be loaded to a separate Konqueror window with 'Detach Tab'. You can also close the active subwindow.

Help Under the 'Help' menu, access the K̲onqueror handbook or the 'What's This?' function. This function can also be accessed via the question mark symbol at the top right in the title bar. The mouse pointer is then displayed with a question mark. If you click an icon, a brief help text is displayed. The 'Help' menu also provides a short introduction to K̲onqueror and the possibility to report bugs and other concerns to the developers. 'About Konqueror' and 'About KDE' provide information about the version, license, authors, and translations of the project.

4.3.2 The Toolbar

The toolbar provides quick access to frequently-used functions that can also be accessed via the menu. If you let the mouse pointer rest above an icon, a short description is displayed. Right-click a free space in the toolbar to open a menu with which to change the position of the toolbar, switch from icons to text, change the icon size, and display or hide the individual bars. The configuration dialog can be started with 'Configure Toolbars'. To the right, the toolbar features the K̲onqueror icon, which is animated while a directory or web page is loaded.

4.3.3 The Location Bar

The location bar is preceded by a black symbol with a white X. If you click this icon, the contents of the line are deleted, allowing entry of a new location. Valid locations can be path specifications, like the one that appears when the home directory is displayed, or web page URLs. After entering

an address, press (Enter) or click 'Go' to the right of the input line. Access
directories or web pages visited recently via the black arrow to the right
of the location bar. This function saves some typing if you need to access
certain contents repeatedly. For even more convenience, create a bookmark.

4.3.4 The Main Window

The main window displays the content of the selected directory. If you click
an icon, the respective file is displayed in Konqueror or loaded into the
respective application for further processing. If you click an RPM package,
the description is displayed. Install the package with 'Install package with
YaST'.

If you right-click an icon, a menu opens. The kind of menu displayed de-
pends on the file type and offers common actions, such as 'Cut', 'Copy',
'Copy', 'Paste', and 'Delete'. Use 'Open with' to select the application with
which to open the file from a list of suitable programs. Files can be en-
crypted directly in Konqueror. However, to use this function, a key must
be generated manually or in KGpg.

The quickest way to perform many actions is the drag and drop method.
For instance, easily move files from one Konqueror window to another by
simply dragging them there while pressing the left mouse button. Subse-
quently, you will be asked whether the objects should be moved or copied.

4.3.5 Creating an Image Gallery

To facilitate the management of extensive image collections in a directory,
Konqueror can generate an HTML file with thumbnails. Open the respec-
tive directory in Konqueror and select 'Tools' -> 'Create Image Gallery ...'.
A dialog opens in which to specify the background and foreground col-
ors, the page title, the location to which to save the gallery, and other set-
tings. Click 'OK' to start the action. By default, a file called index.html
is created. If you click this file in Konqueror, your images are displayed in
a miniaturized, well-arranged view. Click an image to access the full-size
view.

4.4 Important Utilities

The following pages introduce a number of small KDE utilities intended
to assist in daily work. These applications perform various tasks, such as

managing your keys for encrypting and signing files and e-mail messages, managing your clipboard, formatting floppy disks, compressing and decompressing diverse file archive types, and sharing your desktop with other users.

4.4.1   KInternet — Connecting to the Internet

To surf the Internet or send and receive e-mail messages, connect a modem or an ISDN or Ethernet card to your machine and configure it. This can be done with the help of the system assistant YaST. As soon as the respective device has been configured correctly, control the Internet dial-up with KInternet.

On start-up, KDE loads KInternet. The program checks whether an Internet connection can be established. If this is possible, the application icon, a plug, automatically appears in the right part of the KDE panel. The following is an overview of the icons and their meanings:

Currently there is no connection to the Internet.

The connection is just being established or terminated.

The connection has been established.

Data is transmitted to or from the Internet.

An error has occurred. If a connection has already been configured with YaST, use 'View Log ...' to identify the reason for the error. The menu can be accessed by right-clicking the KInternet icon.

The connection is not yet active, but will be established as soon as a request is made.

Right-click KInternet to access a menu for configuring KInternet. To configure your access, select 'Settings ...' -> 'Configure with YaST ...'. After entering the root password, YaST is started. Depending on the access type, start the modem, ISDN, network, or DSL configuration of YaST to select a provider from a list.

KInternet can do even more: if the option 'Channel Bundling' is activated in YaST, a second ISDN channel can be added to an existing connection with 'Add link'. This doubles the transfer rate (although at a higher price).

Activate channel bundling if you need to download large files. The activated channel bundling is evident from the red plus symbol at the top left corner of the KInternet icon.

Users who want to establish Internet connections automatically can use *dial on demand* (DoD). If this mode is selected, KInternet automatically connects to your Internet service provider (ISP) as soon as a request is submitted. After a certain time-out, the connection is terminated. A DoD connection is evident from the blue D at the bottom right corner of the KInternet icon. DoD only makes sense if you have a flat rate Internet account. Otherwise the repeated establishment and termination of the connection can be quite costly.

4.4.2 The Download Manager KGet

KGet is the download manager for KDE, similar to GetRight or Golzilla. With

KGet, manage your transfers in a window. Stop, resume, delete, and queue transfers and add new transfers.

Adding Transfers

Start KGet by pressing (Alt) + (F2) and entering the command kget. When the program is started for the first time, a dialog is displayed. Confirm this dialog to integrate KGet in Konqueror. When you close the dialog, KGet is integrated in the system tray of the panel as an icon with a downward arrow.

Click this arrow to open the dialog displaying your transfers. To add a transfer to the list, select the menu item 'File' -> 'Paste'. A dialog opens. Enter a URL in the input field and confirm with 'OK'. Then specify the location for saving the downloaded file. After all information has been entered, the entry for the transfer is added to the main window of KGet and started.

Another way to add a transfer is by means of drag and drop. Simply drag a file (e.g., from an FTP server) from Konqueror and drop it in the main window.

Timer-Controlled Transfers

You can also instruct KGet to perform your transfers at a specific time. Activate 'Options' -> 'Offline Mode'. All transfers inserted from this point are not started immediately but queued. To start the clock, double-click the respective entry. A dialog opens. Select 'Advanced'. The dialog is expanded

by the settings needed for starting the transfer at a certain time. Enter the day, month, year, and time. Then close the window.

After making the desired settings for all your transfers, set KGet back to the online mode by deactivating 'Options' -> 'Offline Mode'. The transfers should start at the specified times.

Settings

In 'Settings' -> 'Configure KGet ...', set preferences for the connection, determine directories for specific file extensions, and specify other settings.

4.4.3 SuSEWatcher

SuSEWatcher is a program that is integrated in the system tray of the panel. It checks for new updates and new hardware. To be able to find any new updates, it requires an online connection. The program SuSEWatcher is located in the package `kdebase3-SuSE`. The status of SuSEWatcher is displayed by means of colorful icons in the panel.

When you click the icon in the panel, a window opens, informing you about the status of your online updates and the availability of any new updates. You can also launch the check manually by clicking 'Check for updates'. Start the online update by selecting 'Start online update' and entering the root password. The YaST Online Update window is displayed.

4.4.4 The Clipboard Klipper

The KDE program Klipper serves as a clipboard for selected text, normally marked by keeping the left mouse button pressed. This text can be transferred to another application by moving the mouse pointer to the target location then pressing the middle mouse button (on a two-button mouse, press both buttons simultaneously). The text is copied to the selected location from the clipboard.

By default, Klipper is started when KDE is loaded and appears as a clipboard icon in the panel. View the contents of the clipboard by clicking this icon. The Klipper context menu and the last seven entries, also referred to as the history, are displayed (see Figure 4.4 on the facing page). If an extensive text was copied to Klipper, only the first line of the text is displayed. The most recent entry is listed on top and is marked as active with a black check mark. To copy an older text fragment from Klipper to an application,
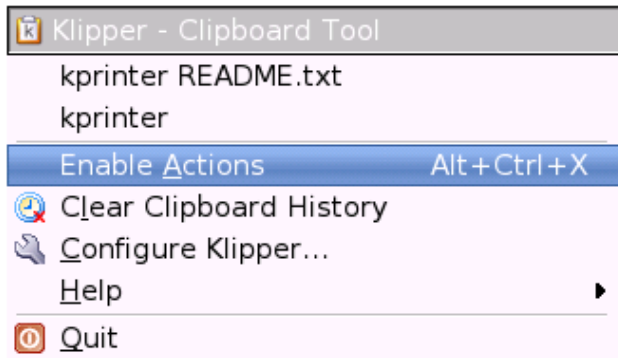
Figure 4.4: *The Clipboard Klipper*

select it by clicking it, move the mouse pointer to the target application, and then middle-click.

As well as the contents of the clipboard, the context menu features the following menu items:

Enable Actions   If you click this, a black check mark is displayed in front of it. For example, if you mark a URL with the mouse when actions are enabled, a window opens, enabling you to select a browser for displaying this URL. Click 'Actions Enabled' to disable this function.

Clear Clipboard History   Deletes all entries from the clipboard.
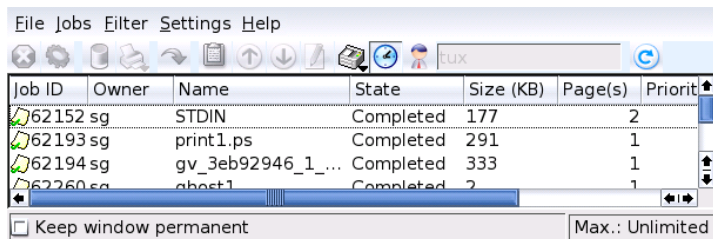
Configure Klipper...   This opens the Klipper configuration dialog. Klipper can be customized in many ways. Control the program with keyboard shortcuts or use regular expressions. Check the Klipper handbook for details. Former Windows users may appreciate the option for activating the keyboard shortcuts (Ctrl) + (C) and (Ctrl) + (X) for cutting and (Ctrl) + (V) for pasting under the 'General' tab. To use this feature, activate the entry 'Synchronize contents of the clipboard and the selection' in 'Clipboard/Selection Behavior'. Subsequently, use the mouse or the keyboard shortcuts to which you are accustomed.

Help   This item opens a submenu from which to open the Klipper handbook, send a bug report to the developers, and view information about Klipper and KDE.

Quit   If you click 'Quit', a dialog is displayed asking whether Klipper should be started automatically the next time you log in. If you click 'No', start the program from the main menu the next time you want to use it. If you click 'Cancel', the program will not be terminated.

4.4.5 Monitoring Print Jobs

Start KJobViewer from the main menu or with the command `kjobviewer` from the command line. This program assists with monitoring print jobs. Print jobs are placed in a queue, from which they are sent to the printer consecutively. As long as your jobs are not printed, edit them with the 'Jobs' menu or by clicking the respective icon. See Figure 4.5.

Figure 4.5: Monitoring Print Jobs with KJobViewer

If, for example, you want to check if you sent the correct document to the printer, you can stop the job and resume it if you decide to print it. Remove your own print jobs from the queue with 'Remove'. To change the printer, select a different printer with 'Move to Printer ...'.

With 'Restart', reprint a document. To do this, select 'Toggle Completed Jobs' from the 'Filter' menu, select the desired document, and click 'Restart' in the 'Jobs' menu. 'Job IPP Report ...' contains the technical details of a job. Use 'Increase Priority' and 'Decrease Priority' to set the priority, depending on how quickly you need the document.

'Filter' enables you to switch between various printers, toggle completed jobs, and limit the view to your own print jobs by selecting 'Show Only User Jobs'. The current user will be displayed in the top right field.

'Settings' -> 'Configure KJobViewer ...' opens a configuration dialog. Here, determine the maximum number of print jobs to display. Enter a number in the field or use the slider to the right to determine a value. Press 'OK' to save the setting or 'Cancel' to exit the dialog without saving.

The icons in the toolbar correspond to the functions you can access by way of the menu. A help text explaining the function is displayed when you move the mouse pointer over one of the icons.

The job list consists of eight columns. The job ID is automatically assigned by the print system to identify the various jobs. The next column contains the login of the user who sent the job followed by the file name of the document. The status column indicates whether a job is still in the queue, currently being printed, or already completed. Next, the size of the document is displayed in kilobytes and number of pages. The default priority of 50 can be increased or reduced if necessary. Billing information can be cost centers or other company-specific information. If you right-click a job in the list, the 'Jobs' menu opens under the mouse pointer, allowing you to select an action. Only a few functions are available for completed jobs. If you activate 'Keep window permanent', KJobViewer window opens automatically when you log in the next time. You can also start KJobViewer using the printer icon in the panel.

4.4.6   Formatting Floppy Disks with KFloppy

KFloppy is the floppy disk formatter of KDE. Start the program from the main menu or from the command line with the command `kfloppy`. KFloppy opens a dialog, shown in Figure 4.6 on the following page, in which to specify a number of settings. Under 'Floppy Drive', select the primary or the secondary drive, provided your machine has two floppy disk drives. The default setting for the size is '3.5" 1.44 MB', which is the most commonly used floppy disk type. The setting for the file system is very important. Choose between the Linux format ext2 and MS-DOS. If you select MS-DOS, you will be able to read and write the floppy disk on a Windows machine.

In the center, select 'Quick Format' or 'Full Format'. The quick format procedure merely rewrites the file system and deletes all data. The full format procedure rewrites all tracks and sectors and is able to detect and mark bad sectors. Sectors marked as bad are not used for writing data. Select 'Verify Integrity' to have the formatting checked and verified upon completion. If you activate 'Volume Label', designate a name for the floppy disk in the input field below.

After making all settings, click 'Format'. You will be warned that all data on the disk will be lost and prompted to confirm. KFloppy informs you if any problems occur during the formatting procedure, including information about any bad sectors.
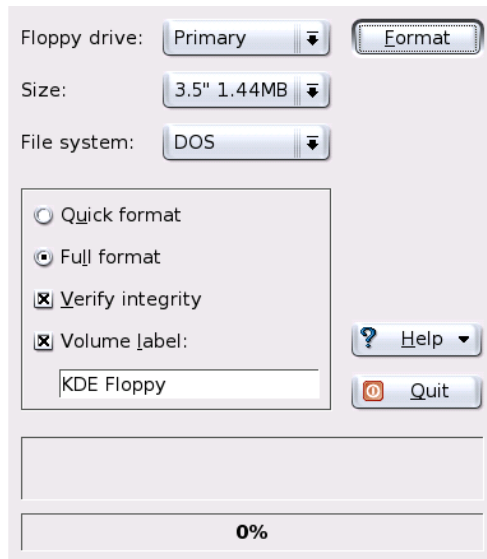
Figure 4.6: *The Floppy Disk Formatter KFloppy*

Click 'Help' to access a short menu that offers the KFloppy handbook. Additionally use it to send a bug report or other concerns to the developers of KFloppy. Selecting 'About KFloppy' accesses information about the version, authors, translation, and license. 'About KDE' provides information about KDE and web pages of the KDE developers. Exit KFloppy by clicking 'Quit'.

4.4.7 Ark: Displaying, Decompressing, and Creating Archives

To save space on the hard disk, use a packer that compresses files and directories to a fraction of their original size. The application Ark can be used to manage such archives. It supports common formats, such as `zip`, `tar.gz`, `tar.bz2`, `lha`, `rar`, and `zoo`.

Start Ark from the main menu or from the command line with the command `ark`. If you already have some compressed files, move these from an open Konqueror window to the Ark window to view the contents of the archive. To view an integrated preview of the archive in Konqueror, right-

click the archive in Konqueror and select 'Preview in Archiver'. Alternatively, select 'File' -> 'Open' in Ark to open the file directly. See Figure 4.7.

Figure 4.7: Ark: File Archive Preview

Once you have opened an archive, perform various actions. 'Action' offers options such as 'Add File', 'Add Directory', 'Delete', 'Extract', 'View', 'Edit With', and 'Open With'.

To create a new archive, select 'File' -> 'New'. Enter the name of the new archive in the dialog that opens. If you enter a file extension, an archive with the specified format is generated. If you omit the extension, `.zip` is used as the default.

After you have entered the archive name, an empty window is displayed. Move files or directories into this window from Konqueror. Ark compresses and lists the files. For more information about Ark, go to 'Help' -> 'Ark Handbook'.

4.4.8 Desktop Sharing

You can share your desktop for use by other users on their hosts. Desktop sharing makes use of the RFB protocol, more commonly referred to as VNC. This feature enables a Linux desktop to be made available for clients using other operating systems, provided they support VNC.

To grant trustworthy users access to your desktop, send them a password. This can be done by means of an invitation. Start the Control Center from the main menu and select 'Desktop Sharing' in the 'Internet & Network' module.

Click 'Create & manage invitations' and choose between 'Create Personal Invitation...' and 'Invite via Email'. If you click 'Create Personal Invitation...', an invitation indicating the IP address of the host, password, and

expiry of the invitation is generated. Send this data manually to the respective person. If you click 'Invite via Email', all required data is transmitted by e-mail. KMail starts automatically and generates an e-mail message with the needed data (host, password, and expiry). At the end of the e-mail, a link, which the recipient of the message merely needs to click to view your desktop in a browser, is provided. Simply enter the e-mail address of the recipient and modify the standard text, if necessary. Then send the message. Refer to Figure 4.8.
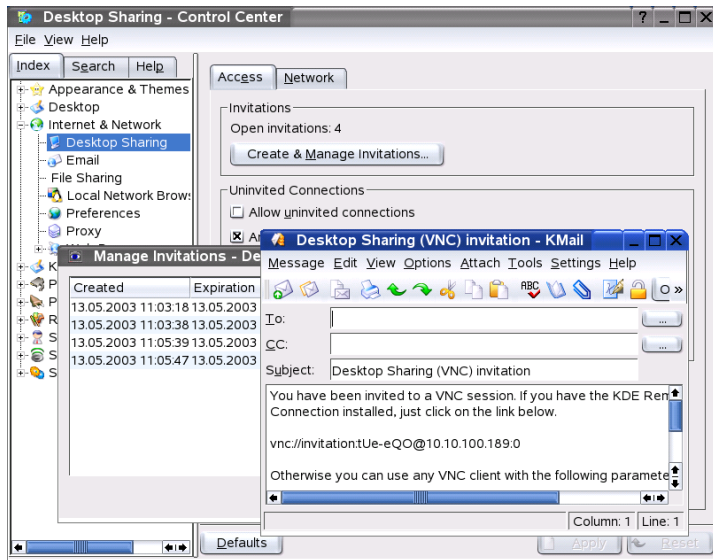
Figure 4.8: Desktop Sharing with Invitation by E-Mail

Use 'Delete All...' to revoke all invitations. To delete an individual invitation, select it then click 'Delete...'.

If an invited person requests a connection, KDE informs you about this request. Decide to accept or deny the connection. If you accept the connection, also use the check box to release the keyboard and mouse control. For security reasons, the maximum duration for a connection is one hour.

To change the default settings, start the 'Control Center' via 'Settings' in the main menu. In the left frame, select 'Internet & Network' -> 'Desktop Sharing'. Various configuration options are available in the lower part of the window. However, for security reasons you should not modify the default settings.

4.4.9   KSnapshot: Taking Screenshots

With KSnapshot, create snapshots of your screen or special applications. Start the program from the main menu or from the command line with the command ksnapshot. The dialog window of KSnapshot consists of two parts (see Figure 4.9). The upper area ('Current Snapshot') contains a preview of the current screen and three buttons for creating and saving the screenshots. In the lower part of the window, determine further options for the actual creation of the screenshot.
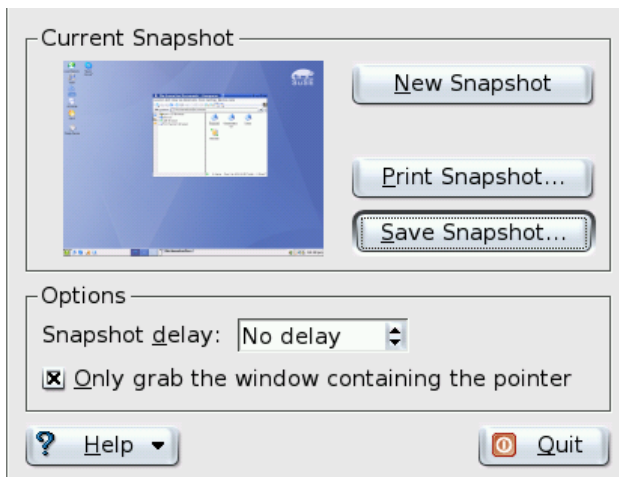
Figure 4.9: Taking Screenshots with KSnapshot

To take a screenshot, use 'Snapshot delay' to determine the period in seconds to wait between the click on 'New Snapshot' and the actual creation of the screenshot. If 'Only grab the window containing the pointer' is active, only the window containing the pointer is "photographed." To save the screenshot, click 'Save Snapshot...' and designate the directory and file name for the image in the following dialog. Use 'Print Snapshot...' to print the screenshot.

4.4.10   Kontact

The application Kontact bundles the display of e-mails, notes, contacts, news, weather, and a calendar into one window. Open it by pressing (Alt)-

F2 and entering `kontact`. See Figure 4.10.
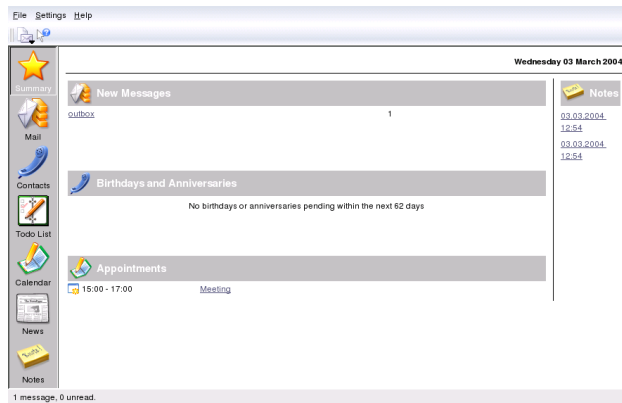
Figure 4.10: Kontact

In 'Settings' → 'Configuring Kontact', select which components should appear in the window.

4.4.11 Chatting With Friends: Kopete

Kopete is an online messenger application allowing multiple partners connected to the Internet to chat with each other. Kopete currently supports all common messenger protocols, such as ICQ, MSN, Yahoo, SMS, Jabber, and IRC.

Configuring Kopete

Configure Kopete by entering your personal user data. Click 'Settings' -> 'Configure Kopete'. 'Connections' shows all currently available protocols. Check the desired connection type to activate it.

With 'Accounts', enter your user data. You must register with a provider offering instant messaging services before using such service. Click 'New' to open a configuration assistant that can assist you in completing your user profile.

The next step lists the avilable messaging services. Select the service with which you have registered and click 'Continue'. In the next step, enter the user data received upon registration with the messaging service. This

usually consists of the nickname or e-mail address and the password you chose. Complete the configuration of the messenger account by clicking 'Finish'.
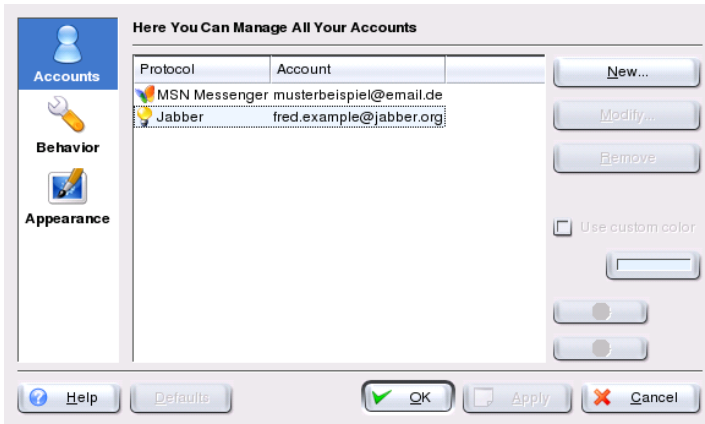
Figure 4.11: *Kopete Configuration Panels*

The next item in the configuration dialog is 'Appearance'. It influences how Kopete is displayed. The tab 'Emoticons' provides a selection of various types of smileys.

The tabs 'Chat window' and 'Colors & Fonts' offer the possibility to adjust the appearance of the chat windows for communication with other participants. Choose between the classic themes of the corresponding providers or to create a custom theme by adjusting the font or color to personal preference.

Adding Contacts

It is necessary to add contacts in order to chat with a participant. If you have already created an account on another PC, this data is readily imported and automatically added to your contact list. To create a contact entry manually, click 'File' -> 'Add contact'.

A new assistant appears automatically that will accompany you until completion. However, consider that must be online to add a contact to your list.

Adding Groups

Access this with 'File' → 'Create New Group'. Name the group and confirm this with 'OK'. A new folder appears in the contact list that can be used to store the desired contacts. You can drag and drop contacts into the desired folder. This allows grouping contacts for a better overview.
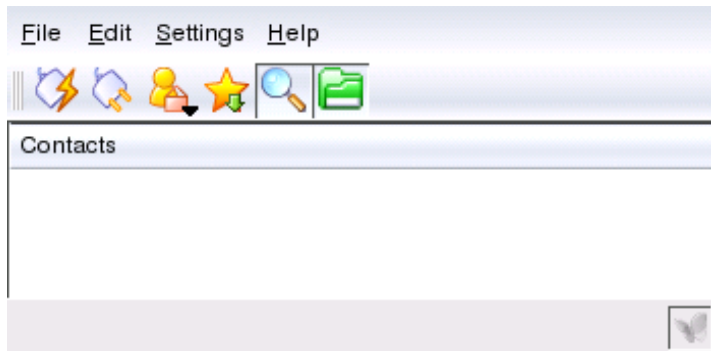
Figure 4.12: *The Main Kopete Application*

Using Kopete

It is necessary to establish a connection to the Internet to be able to chat with other participants. When this is done, clicking 'File' → 'Connection' → 'Connect All' then establish a connection between Kopete and the selected messaging service.

The main application windows features a list of contacts. When you right-click a contact marked as online, a menu opens with various options. Send that person a message or start a chatting session. A chat allows invitation of other participants for real-time discussion. The connection to all other participants is closed when the creator of the chat session leaves the room first.

Files can be transferred comfortably with an instant messenger by right-clicking a user and then clicking his name. Many options, like 'Delete Contact', 'Show User Information', 'Block User', and 'Send File', can be found here. Clicking 'Send File' opens a dialog for selecting the desired file. Confirming with 'OK' sends a dialog to the receiving user asking whether he wants to accept the file. If he accepts, the file transfer starts.

4.4.12 Font Administration

By default, SUSE LINUX provides various fonts commonly available in different file formats (Bitmap, TrueType, etc.). These are commonly known as *System Fonts*. Users can additionally install their own fonts from various collections on CD-ROM. Such user-installed fonts are, however, only visible and available to the corresponding user.

The KDE control center provides a comfortable tool for administering system and user fonts. It is shown in Figure 4.13.
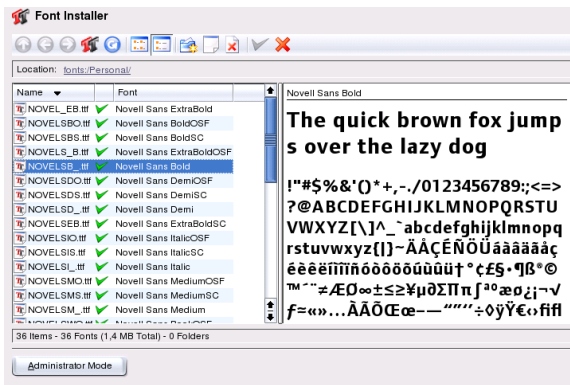
Figure 4.13: Font Administration from the Control Center

To check which fonts are currently available, type the URL `fonts:/` into the address field of a Konqueror session. This displays two windows: `Personal/` and `System/`. User-installed fonts are installed to the folder `Personal/`. Only root can install to the `System/` folder.

To install fonts as a user, follow these steps:

1. Start the Control Center and access the appropriate module with 'System Administration' → 'Font Installation'.

2. Choose 'Add Fonts' from the icon bar or from the menu available when right-clicking the list.

3. In the dialog that opens, select one or more fonts for installation.

4. The marked fonts are then installed to your personal font folder. Selecting a font shows a preview.

To update system fonts, first select 'System administration mode' and enter your root password then proceed as described for user font installation.

The feature for deactivating installed fonts is very useful. They are not removed but are made unavailable to the system. Select the 'deactivate' icon or its counterpart from the context menu. This makes the green checkmark disappear. The new settings become active after confirmation with 'Apply'. The deactivated fonts are then no longer available to applications. This reduces the size of font lists displayed in applications.

Index