

Red Hat Desktop

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Red Hat Desktop

Red Hat Desktop Training Manual

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Unit 1 **A first look**

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Linux origins

- 1970: Unix, the research project
- 1980: Unix, the commercial product
- 1985: FSF and the GNU Project

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Operating systems

An operating system can be viewed as an interface between the hardware and the user programs. It implements some redundant functions to use the hardware that applications don't need to bother implementing separately over and over again. The operating system is also useful for mediating the use of the system resources between several concurrent programs running at the same time giving the user an impression of multi-tasking.

Unix at AT&T Bell Labs

Unix started as a research project at AT&T Bell Labs in the late 60's. It knew a big success in the Academia mainly because it was the first actual operating system to run in the same way on various hardware platforms made by different vendors, this capability is called *portability*.

Unix and the industry

When software patents became legal in the US, AT&T decided to turn Unix from a research project into a commercial product, benefiting from the popularity it gained over years. Several competing vendors started to implement their own versions of Unix (licensed from AT&T) running on their own hardware, the table below illustrates some still popular Unix vendors with their respective products.

Vendor	Unix version	Hardware
Sun	Solaris (was SunOS)	Sparc
IBM	Aix	PowerPC
hp	hp-ux	PA-Risc
SGI	Irix	Mips

As Unix moved into the industry, the different brands started to add features to distinguish their version from the competition's. This tendency made Unix progressively lose its portability and openness merits, the fact that the different vendors were making the hardware, the operating system and the user tools themselves brought the costs too high. The literature refers to this as the *Unix market fragmentation*.

The Free Software Foundation

Former Unix users and developers felt that they don't have the same flexibility and freedom of using the operating system any more, mainly because of the loads of patents that restrict the way the different implementations of Unix are used and modified, if ever possible. One Unix developer, *Richard Stallman*, started the *Free Software Foundation* aiming at building an operating system and a set of tools that have none of the legal bindings of the existing Unix versions, the project was called *GNU* for GNU is Not Unix.

Linux origins

- 1991: Linux
- 1992: Linux distributions
- 1994: Red Hat
- 2003: Desktop Linux

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1991, enter Linux

By early 90's, the FSF GNU project managed to build some very high-quality programs like the GNU C compiler and the Emacs text editor. Still it was lacking a corner stone component: the operating system *kernel*.

In November 1991, *Linus Torvalds* (read Leenus Toorvalds) a Finnish student from Helsinki University posted a message to the Usenet groups about a project he was working on. Linus was trying to implement a version of Unix for the Intel 80386 processor, the project was called *Linux*. Linux was a perfect fit for the GNU project, thanks to the Internet, the development of Linux became one of the largest collaborative projects in history and, quickly, Linux became a mature and open operating system.

Linux distributions

Even with a strong backing from major IT makers, companies needed to deal with a peer company to deploy Linux rather than relying on an elusive electronic community on the Internet. For this matter, some companies started to provide packaged Linux products with technical support, documentation, training and a maintenance program. Red Hat, started in 1994, is the most popular Linux vendor.

Desktop Linux

After the phenomenal success of Linux as a server operating system, some development projects focused on enhancing its user interaction capabilities. Linux is an ideal platform for an enterprise desktop mainly for its performance, security and reliability.

Linux capabilities

- Efficient security model
- Very stable
- Runs on nearly all systems
- Comes with a full range of applications
- Various network protocols and file systems
- Very flexible
- High performance
- Requires modest hardware

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The **Linux security** model is built on the same Unix security model that kept improving over the past 30 years. Many proved modern security technologies are included in Red Hat Desktop for instance. By design, the Linux Desktop is not vulnerable to viruses.

The Linux desktop is very **stable** and rarely crashes. Application faults do not bring down the whole system. Linux is a true multi-user environment and many users can log to the same system at the same time. The Linux operating system can handle all the respective tasks independently.

The Linux operating system runs on nearly all **hardware platforms** including Intel x86, Intel Itanium, Sun Sparc, hp Alpha, SGI Mips, hp PA Risc, IBM PowerPC, AMD 64, etc. Red Hat Desktop for instance supports Intel x86, Intel Itanium and AMD64.

The default Red Hat Desktop ships with a full range of **applications** including but not limited to: office productivity, games, software development tools, Internet communication, multi-media tools, graphics editing, web publishing, etc. This course will cover only a limited set of these applications related to desktop productivity. A large number of third party applications are made by independent software vendors.

Many communication **protocols** and **data formats** are supported by the Linux kernel. A Linux system can be connected to different networks and can exchange data with different operating systems.

The fact the Red Hat Desktop ships along with the **source code** for the Linux kernel and nearly all the other user applications makes it very easy to customise the system to the particular needs of the organisation. Some vendors are, for instance, making Linux-based Personal Digital Assistants and mobile phones.

Some of the **fastest** computer systems in the world are running Linux today either in massively parallel configurations or in clustered configuration. Being a fresh implementation of Unix it has a flexible and clever sub-systems design. The latest releases include optimisation for interactive performance for an enhanced desktop user experience.

Users and System Administrators

- Same as Unix approach
- Users do productivity work
 - Actions limited into their *home directory*
 - Don't need to bother with system administration
- Administrators do system tasks

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In Linux there is a clear distinction between **regular users** and the **system administrator** (usually the **root** user). Regular users are supposed to do productivity work and to focus on that, they are not supposed to tackle system problems like failing disks, viruses or data backup.

The role of the system administrator is to make sure that the system is operating in a satisfactory manner to allow users to perform their tasks comfortably.

Regular users don't have permissions to modify system files, every user has a directory where they can manage files as they like, this directory is called the **home directory** of user X which is usually `/home/userX/`.

With some operating systems designed specifically for the Personal Computer (PC), there is not really a clear distinction between the role of the system administrator and the regular user. Users are often supposed to deal with system administration tasks.

Linux is a Unix that can be used on personal computers, therefore it can be regarded both as a server operating system and as a single user operating system. In enterprise desktop deployments Red Hat Desktop needs to be maintained by authorised system administrators.

Some definitions

- Devices
- Console and console emulators
- Shells
- X Window
- File system
- Displays and screens

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Device

A device is a physical or a virtual object from which applications can read and/or write. The floppy drive, for instance, is a physical device to which one can write files and from which one can read the same. The keyboard is another example of physical devices from which we can only read, the user keystrokes are what is read by applications. Linux provides applications with some virtual devices, these do not have a physical presence, they are just an “invention” of the operating system to provide a service in the form of a file from which data can be read. For example, Linux has a virtual device to generate random numbers.

All of these devices are accessed through some file names, the floppy device is represented by a device file named `/dev/fd0` and the random number generator by a device file named `/dev/random`.

Console

The console is a device through which the user may interact with the system, in its simplest form interaction happens when the user types commands and the system displays results. The console is usually a keyboard and a monitor possibly with a pointing device. Some literature refers to this combination as a *terminal*.

Terminal emulator

A terminal emulator is a program that behaves like a physical terminal by managing a window that emulates the monitor and by relaying keystrokes from the user to the system. A physical terminal may be running several instances of terminal emulators.

Shell

The shell is a program that uses the devices of the console (or terminal) to interact with the user. Linux shells allow the user to interactively run commands and to run shell programs (scripts).

X Window

Unlike other operating systems, the graphical sub-system in Linux is just another application, it's not an inherent part of the operating system. The graphical sub-system in Linux is called X Window.

Display

“Display” is a generic term used by X Window to refer to a device that can be used to draw graphical objects. The PC monitor is a display.

File system

The file system is the set of algorithms and data structures used to organise the stored data on disks. Since the disk device is a plain and dumb sequence of blocks, the file system is the software layer that gives the view of file names, directory trees, file ownership, etc.



The X Window logo

A first look

- The login process
- The display manager
- Various environments
- Different behaviours
- Flexible design but inconsistent GUI!
- The Desktop Environment

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Linux needs to authenticate the user before it can allow them to interact with the system. The most common way of proving one's identity is the (login, password) pair, whether in text or in graphics mode the process is the same: prompt for a login and a password, if the credentials are validated, open a session for the user and start all the programs required for them to interact with the operating system.

X Window was designed in the early 80's to allow different terminals to access graphical applications on large servers. It has the merit of being truly device-independent and operating system-independent, any graphical application written for X Window, also called an **X Client**, can display on any **X Window server** using a network connection.

X Window is a very flexible graphical protocol, it does not enforce any rules or guidelines as to the applications appearance or behaviour. The good side of this flexibility is that it allows applications developers to design their applications with more freedom, the downside is that there's no single way of interaction which tends to confuse users who need to learn different reflexes with every new application. Developers also do suffer from this because their applications wouldn't communicate with those from other developers. Some layers were added to the plain X Window system to compensate for the shortcomings.

The **Window manager** is a layer added to the X Window server to provide basic window management like resizing, minimising and moving. Some window managers provide menus to launch applications.

The **Desktop Environment** is a very sophisticated system (which includes a window manager) that provides a framework for software developers and enforces rules for application behaviour and communication. The K Desktop Environment or **KDE** is the desktop this course will be covering, other desktop environments include **GNOME** and Common Desktop Environment (**CDE**), a more popular alternative on legacy Unix platforms. **BlueCurve** was introduced by Red Hat to unify Gnome and KDE looks and reduce possible user confusion, this course shows illustrations with BlueCurve themes.

```
Red Hat Desktop release 3 (Taroon)
Kernel 2.4.21-15.EL on an i686
station01 login:
```

The default Red Hat Desktop text login screen



The default Red Hat Desktop graphical login screen

Lab 1: A first look

Objectives

- Observe the behaviour of the console login
- Observe the behaviour of certain shell commands
- Distinguish the difference between window managers and desktop environments

Sequence 1 Login from the text console and try some commands

1. Press the key combination Ctrl + Alt + F1
2. Login as **userXX** with password **redhat**. XX being the number of your workstation.
3. Type some of the following commands and observe the output

```
$ ls
```

```
$ cp file1.txt file2.txt
```

```
$ pwd
```

```
$ logout
```

Sequence 2 Login from the graphical display manager

1. Press the key combination Ctrl + Alt + F7
2. Type your login and password in the dialog
3. Right-click on the desktop and pick the **Logout “userXX”...** option

Sequence 3 Try the “Fail safe” mode and some window managers

1. Select the “Fail safe” option in the session menu
2. Type your login and password in the dialog. The only program started is a terminal emulator, you can notice that there's no interaction with the desktop
3. Type `twm` in the terminal emulator, notice the desktop menus and the window decorations
4. Type Ctrl + C in the terminal emulator to kill the window manager, notice the change,
5. Type `startkde` in the terminal emulator and observe the desktop environment loading

Red Hat Desktop

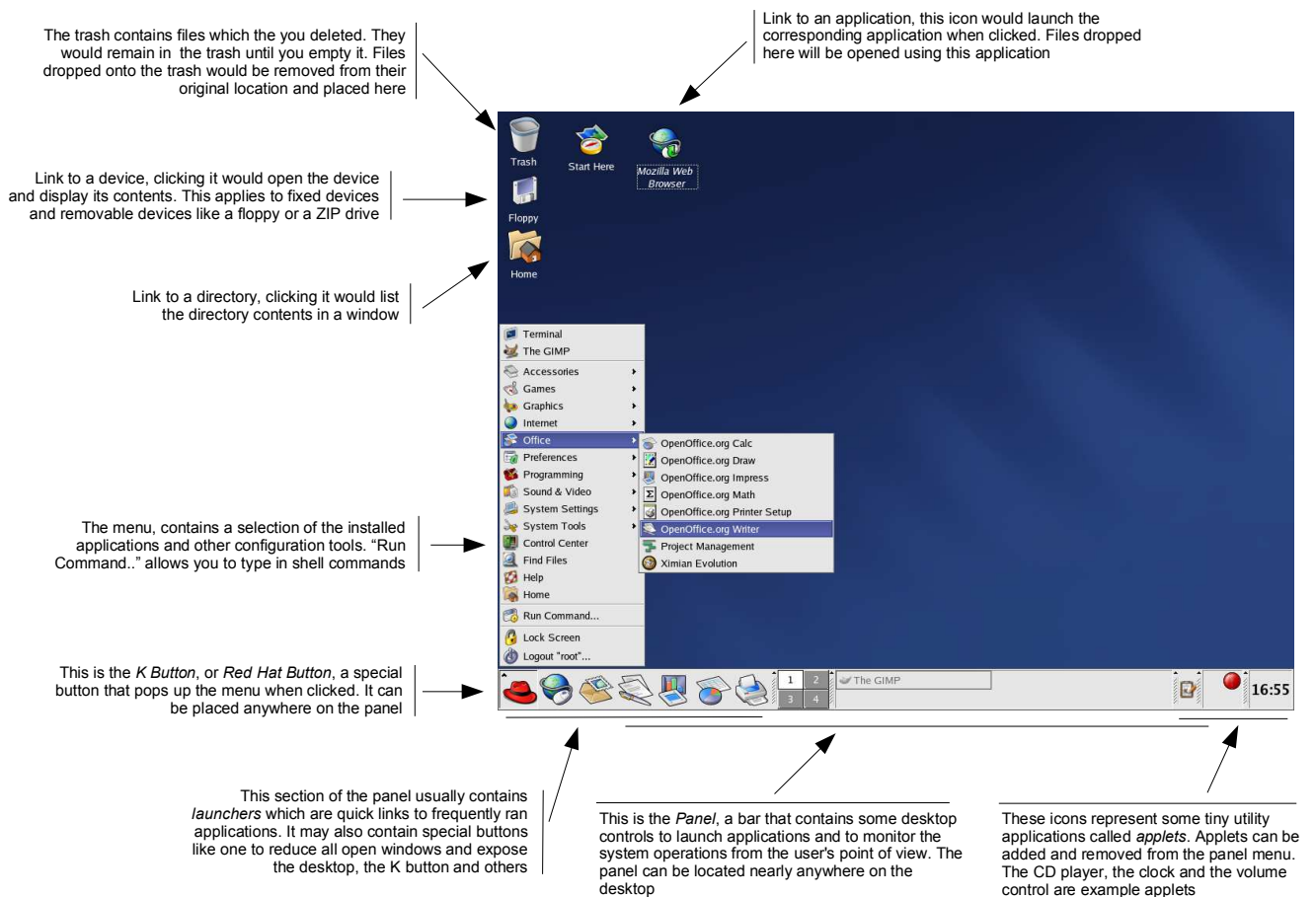
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KDE visual elements

- The desktop
- The panel
- The menu
- Applets
- Devices

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Discovering Red Hat Desktop

- konqueror – the Swiss Army knife
- Virtual desktops
- Panel menus
- File manipulations

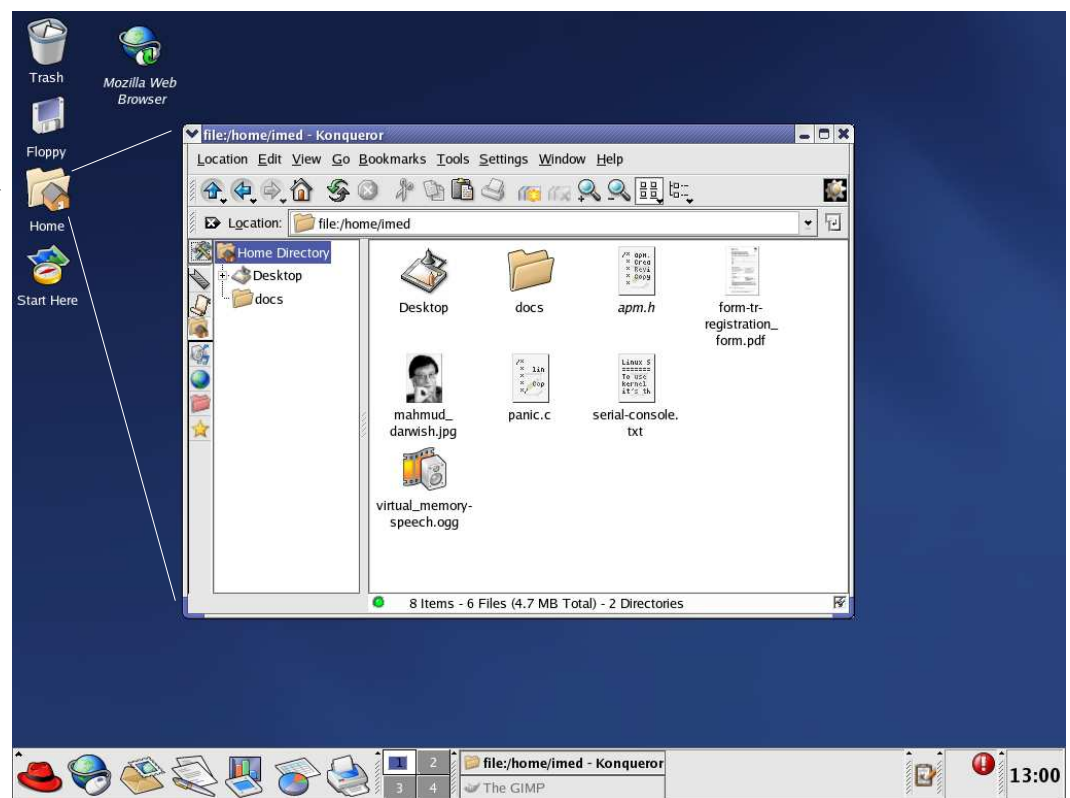
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Double clicking the Home icon opens the home directory of the user in the file manager: *Konqueror*

The screen shot in this page shows a window of *Konqueror* displaying the contents of a home directory.

The  and  icons can be used to adjust the size of the icons.

The default set up has support for virtual desktops which are used to arrange windows in different spaces and cycle through these spaces when needed. This can, for instance be useful to put all windows related to web browsing in one virtual desktop and those related to programming in another.



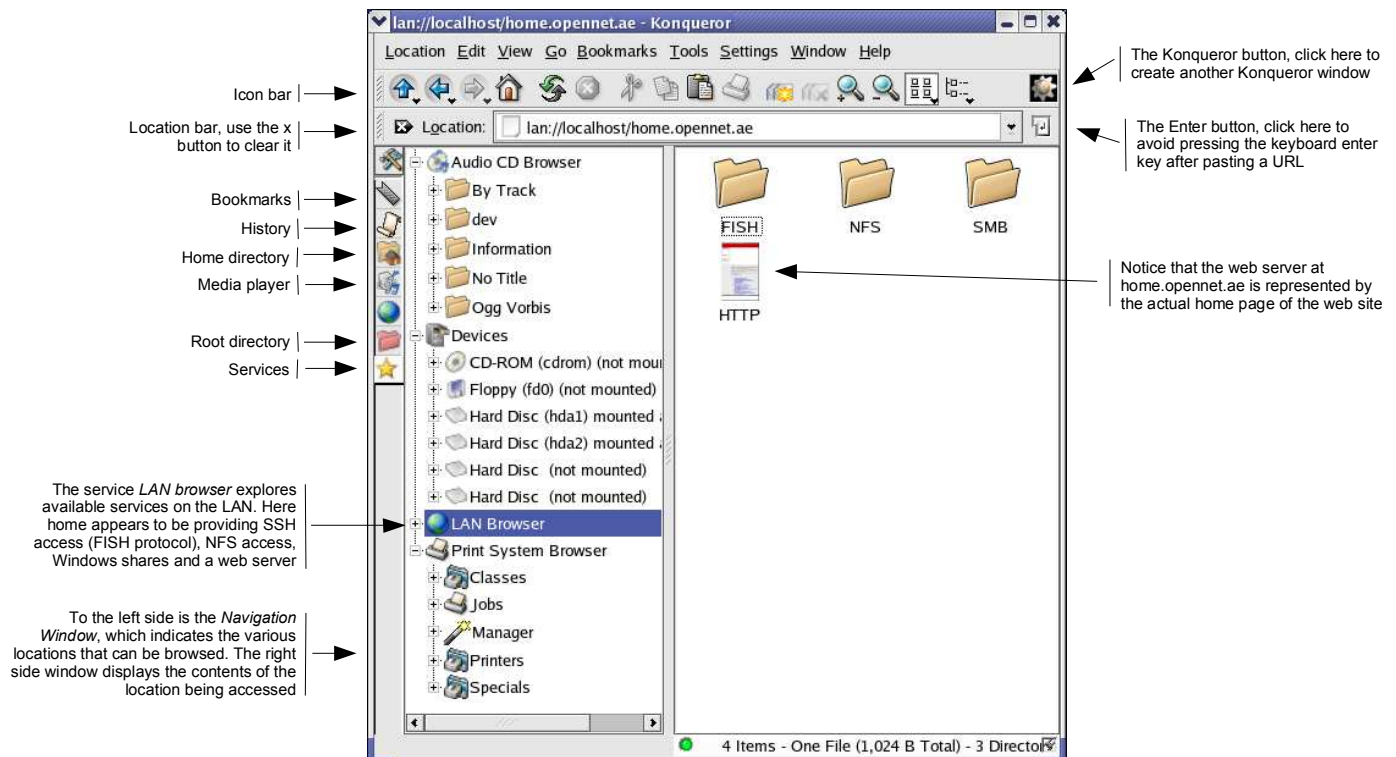
This *pager* is an applet used to access virtual desktops and to give a real time view of their occupancy. The number of virtual desktops can be adjusted by the user

Konqueror

- Browse local files
- File listing using mini previews
- Internet browser
- Various network servers

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Konqueror is the KDE file manager and web browser. It's actually a lot more than that since it can browse **nearly anything** and present it in a window of items just like local files. Konqueror can browse local files, web servers, FTP servers, audio CDs, manual pages, SSH servers, MS Windows shares, compressed archives, and the list goes on and on. It uses specialised *Kioslaves* to access these various resources.



Konqueror allows the user to perform all of the common **operations** on files in a very easy way. It supports drag and drop from and to nearly any X Window application. Most file types in Konqueror are represented not with a generic icon but with a tiny **preview** of the file's actual contents like in JPEG images, C programs and PDF files. The file types previewed in this manner can be customised by the user.

The Linux file system

- Tree structure
- Case sensitive
- Long names
- No extension
- Hidden files start with a dot
- Links

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Just like the Unix file structure, the Linux file system can be regarded as a tree of directories and files. The path to a file is written with `/` as a separator between directories like in `/usr/share/icons/trash.xpm`. The illustration below shows some top-level directories in a Linux system. Directories in a solid box contain no user serviceable files, those in a dashed box may contain files which the user can use or edit.

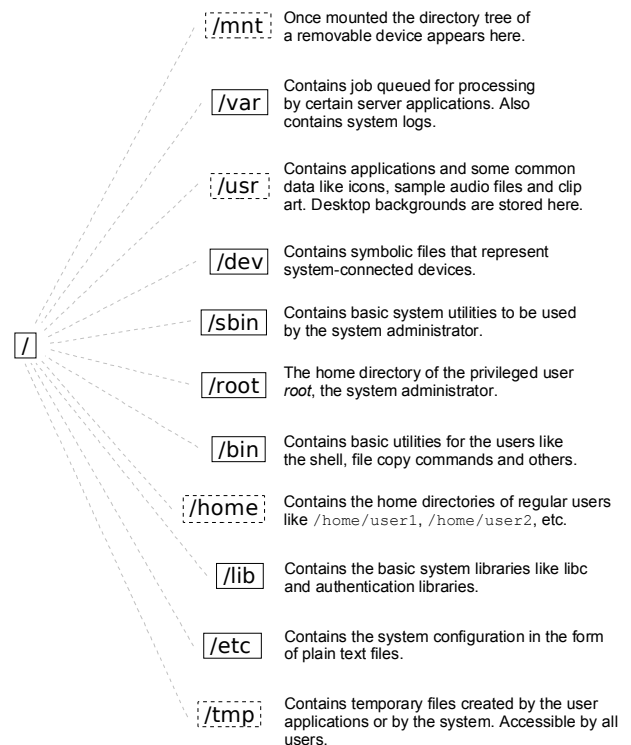
Linux file and directory names are case sensitive, that is: `photo1.jpg` and `Photo1.jpg` are two distinct files which may coexist in the same directory.

On most configurations, file names can be up to 256 characters in length.

There is no notion of extension for the file system, the use of extensions like in `photo2.jpg` and `core.c`, is an application convention, therefore names like `pic-1.jpg.txt.....graduationparty.` are perfectly legal.

Again, another application convention is not to list files and directories starting with a dot, like in `.kde/` and `.signature`. Most applications contain options to force the display of such files.

The Linux file system supports *links* which are entities with a file name but with no actual contents, their contents would be in another file they point to. Konqueror displays links with an italicised name.



Working with files

- Permissions
- Searching for files
- Comparing files
- Using compressed archives

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The file search facility is available through **Tools/Find File...** Any Linux resource, like a file, is owned by a user, basic file access security is controlled by the file system permissions: **r** for read, **w** for write and **x** for eXecute. These permissions are set for the owner of the file (user), the group owning the file (group) and other users (others).

Different criteria can be used to search files. Criteria include: the file name, the contents, the date and time of last access, permissions, the file size, etc.

Ark manages archives compressed with tar, gzip, bzip2, zip and other tools. panic.c was dropped onto Ark to add it to the backup.tar.gz archive. Items can also be added using the **Add File** and **Add Folder** icons

Basic file access restrictions for: 1. the owner (user), 2. the group owning the file and 3. the other users who are neither the owner nor member of the owning group. A more compact notation uses 3 sets of letters like in `rw-r--r--` above, permissions can be changed through the Properties menu of the file

file:/home/imed - Konqueror

Location Edit View Go Bookmarks Tools Settings Window Help

Location: file:/home/imed

Name/Location Contents Properties

Named: panic.c

Look in: file:/home/imed Browse...

Include subdirectories Case sensitive search

Find Stop Save As... Close

Name	Size	File Type	Modified	Permissions	Owner	Group
panic.c	3.2 KB	C Source File	2004-11-24 04:18	rw-r--r--	imed	imed

0 Directories

File Edit Action Settings Help

Filename	Permissions	Owner	Group	Size	Timestamp	L
docs	drwxrwxr-x	imed	imed	0	2004-11-24 04:23	
docs/gnudev-introduction-en.html	-rwx-----	imed	imed	27,499	2004-11-24 04:23	
docs/img1.png	-rwx-----	imed	imed	1,354	2004-11-24 04:23	
mahmud_darwish.jpg	-rwx-----	imed	imed	34,364	2004-11-24 04:12	
panic.c	-rw-r--r--	imed	imed	3,229	2004-11-24 04:18	
serial-console.txt	-rw-r--r--	imed	imed	3,912	2004-11-24 04:15	

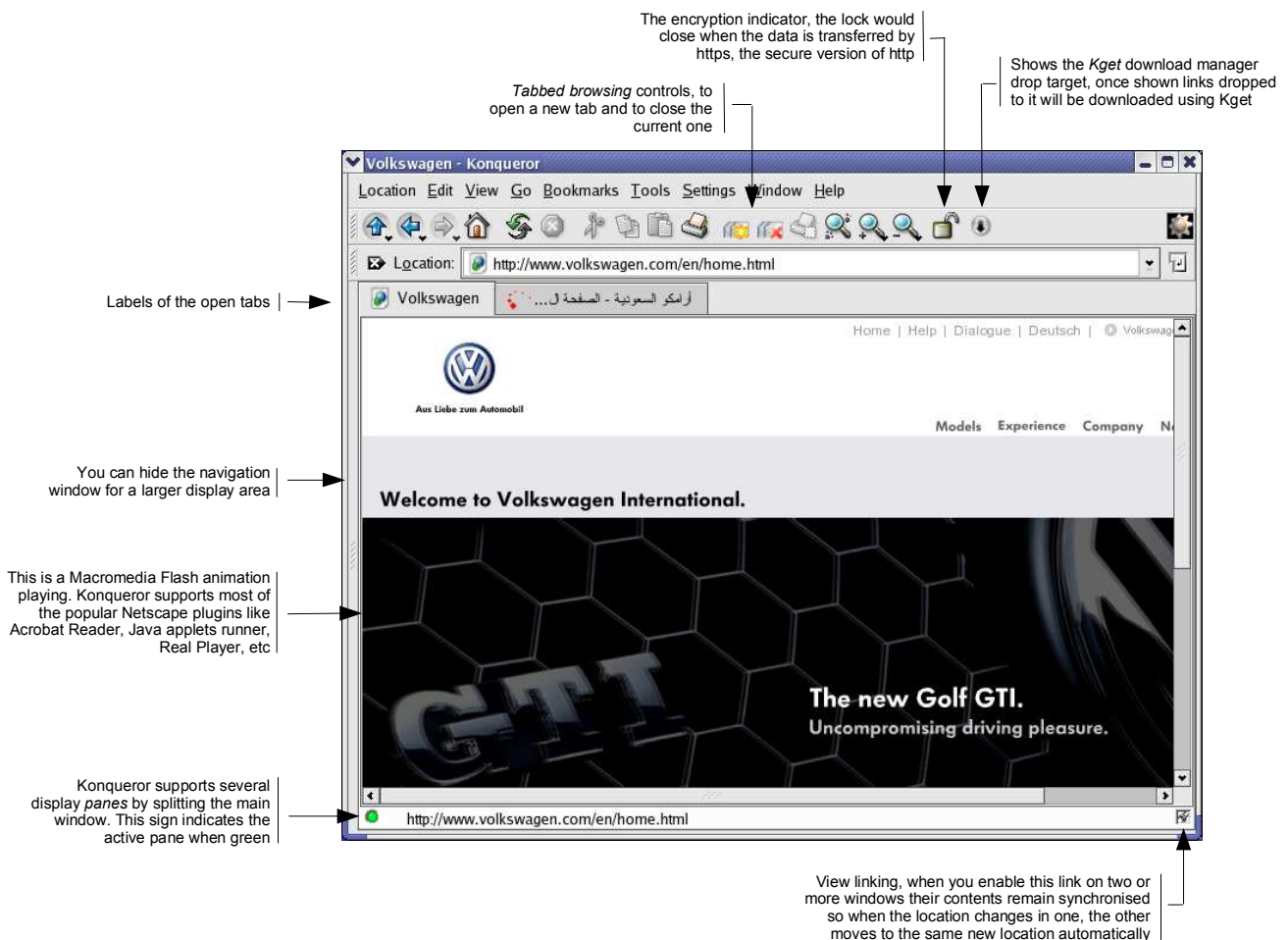
1 file selected 3.2 KB 6 files 68.7 KB

Browsing the Internet

- konqueror, again
 - Tabbed browsing
 - Fine integration with KDE
 - Can change identification
 - May not render all contents
 - Consider Mozilla or FireFox
 - Supports Netscape plug-ins

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Several browsers are available for Red Hat Desktop, in default installations there would be **Konqueror** as part of KDE. Some web content is not standards-conforming, thus Konqueror may not render it as intended by the authors. Consider using **Mozilla** or **FireFox** in these cases. Some web sites would check your browser identity and would refuse to work if your browser is not, say, Internet Explorer, in these cases you may want to change Konqueror's identification through *Tools/Change Browser Identification* menu.

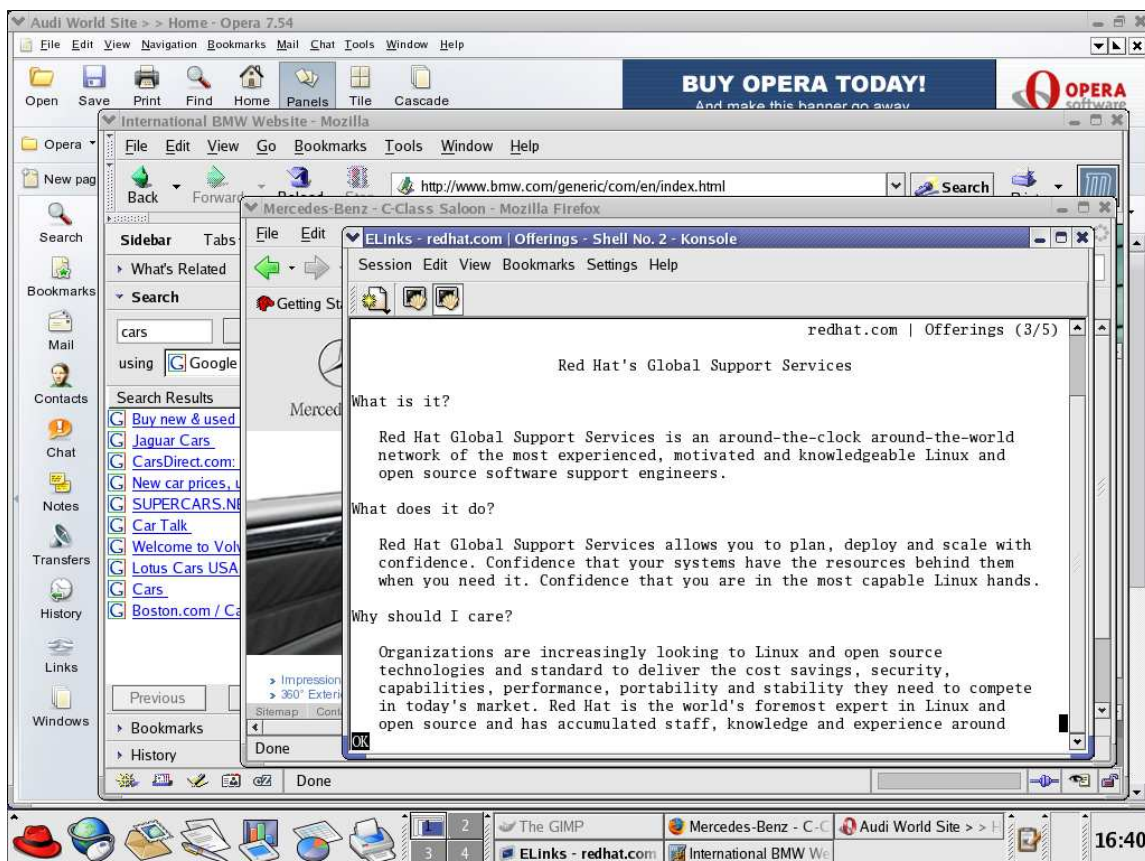


More browsers

- Mozilla
 - GTK+-based, like Gnome
- FireFox
 - Same engine as Mozilla
- Opera
 - Not a KDE application, but Qt-based
- Links
 - Text mode browser

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By default Konqueror would be installed on your desktop along with **Links**, the text mode browser, and **Mozilla**. Other browsers like **Opera** and **FireFox** can be installed by systems administrators as additions. FireFox uses the same rendering engine as Mozilla but has a lighter user interface. Although not a KDE application, Opera is based on the Qt toolkit and contains a complete Internet suite including contacts management and e-mail. Links may be used on low-bandwidth connections and with sites where the content is mostly plain text. Newer versions of **Netscape Browser** are actually based on the same source tree of Mozilla.



Web browsers cascaded, from back to front: Opera, Mozilla, FireFox and Links.

Finding help

- KDE Help Center
- Application handbooks
- man pages
- info files
- The web

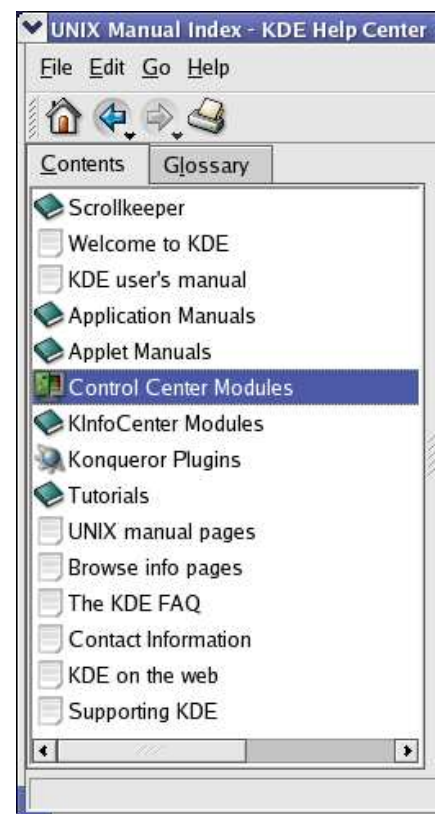
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The *KDE Help Center* is an application designed to view the different formats of Linux software **documentation**. *Application Handbooks* or *Application Manuals* are the KDE way of documenting user applications. At installation time the application installer registers the documentation within the KDE Help Center.

The traditional Unix documentation format is the manual pages or **man pages**. Manual pages can be viewed in Help Center or in the shell using the command `man gcc` for the compiler's manual page. You can search manual pages using the command `apropos gcc` or `man -k gcc`. Konqueror can view manual pages using the `man kiosk` slave, the URL would be `man:/gcc` to view the same man page.

Apart from man pages, which are brief documents, the GNU software uses the *TeXinfo* format for the more elaborate software documentation: **info pages**. TeXinfo documents can be viewed in Help Center or in the shell using the `info gcc` command. In Konqueror the URL for the same would be `info:/gcc`.

The *Linux Documentation Project* at <http://www.tldp.org/>, hosts a large set of documents including the above-mentioned man pages as well as **how-to** and **guides**. How-to's are elaborate documents detailing the experience of other users about how they solved a particular issue. Guides are complete books on some advanced topics written in an academic style.



KDE Help Center contents.

Lab 2: Discovering your Linux system

Objectives

- Practise the use of Konqueror for different purposes
- Practise the desktop items
- Practise the use of the pager and understand virtual desktops

Sequence 1 Practise the use of Konqueror to create files

1. Double click your home icon
2. In the file listing area click with the right mouse button
3. Select the option `Create New/File/Text File...`
4. Type the file name as `myfile.txt`
5. The file appears immediately in the Konqueror window in your home, double click on it to start editing in the text editor
6. Create another file calling it `mycode.c` this time
7. Double click on it to start editing and type some C code, notice that *KWrite*, the text editor is formatting your text as C code
8. Drag the newly created file to the desktop area and create a link there

Sequence 2 Practise the use of Konqueror to browse network resources

1. Click the `Services` tab in the navigation window
2. Click `LAN Browser`, then `server1.example.com` or `192.168.0.254` to view the available services on that machine
3. Double click on the `FISH` icons which represents the SSH service, notice that you can browse the file system on `server1`

Sequence 3 Practise the use of Konqueror to browse documentation

1. Type `man:/gcc` in Konqueror and browse through the GCC man page
2. Type `info:/gcc` in Konqueror and browse through the GCC info manual

Sequence 4 Practise the manipulation of virtual desktops

1. Click on the Konqueror title bar with the right mouse button
2. Select `To Desktop/Desktop 2`
3. Observe the change in the pager applet

Sequence 5 Add and remove an applet from the panel

1. Click on the panel with the left mouse button
2. Select `Panel Menu/Add/Applet/KnewsTicker`
3. Observe the addition of a new applet to the panel
3. Select `Panel Menu/Remove/Applet/KnewsTicker`

Sequence 6 Create a compressed archive

1. Click the KDE menu (Red Hat menu) and select `Run Command...`
2. Type `ark` and the Enter key to start the archive manager
3. Drag some files, including `panic.c`, from your home directory and drop them to the Ark window
4. Ark would ask for an archive name, type `backup.tar.gz`
5. Save and exist Ark, notice the addition of the archive in your home directory

Lab 2

Sequence 7 Practise the use of Konqueror to browse archives

1. Click on `backup.tar.gz` which is a compressed tar archive (a *tar ball*), notice that Konqueror is browsing through the archive without extracting its contents
2. Double click on `panic.c`, notice that Konqueror opens it in the text editor without extracting the whole archive

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Messaging with KMail

- KMail
 - A KDE application
 - Supports signing and encryption
 - Multiple identities

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Kmail is the mail client of KDE, it integrates very well with other KDE applications namely supporting drag and drop. It supports most popular messaging protocols like SMTP, POP and IMAP in their plain and encrypted forms. You can have different e-mail accounts and different **identities** in the same Kmail instance.

Kmail supports the **mail-dir** format for storing messages which allows for huge mailboxes. With traditional storage formats mailbox access becomes slow as the number of messages grows.

Incoming messages can be automatically stored in (possibly nested) folders using powerful **filters**.

Irritating messages, like spam, can be returned (or **bounced** back) to their senders as being undeliverable.

Kmail can use *GNU Privacy Guard* to digitally **sign** and **encrypt** messages.

With the Unicode support, Kmail is capable of composing and displaying messages in nearly all of the World **languages**.

Retrieve messages from all accounts, press long to select a particular account

Open the search dialog to fetch messages according to some search criteria

Open the KDE address book *Kaddressbook* to manage contacts

The message list, shows the folder's messages and their status like new, unread or old, supports the *thread* view

Folder	Unread	Total	Subject	Sender	Date (Order of Arrival)
Local Folders					
inbox	-	833			
outbox	-	-			
sent-mail	-	67			
trash	-	6			
Community					
arabeyes	296	726	• C++ Unicode for arrabic	Omar Abdalla	Tuesday 20:10:39
dubailug	998	1492	• RE: C++ Unicode for arrabic	Nadir Durrani	Tuesday 21:08:09
kernel	-	-	- Re: C++ Unicode for arrabic	Omar Abdalla	Tuesday 21:22:39
kt	5	-	- Re: Help regarding arabic in jsp	Nadim Shaikli	Tuesday 21:37:21
unnamed	-	24	- Re: C++ Unicode for arrabic	Mohammed Yousif	Yesterday 04:19:51
Personal	-	-	• Fwd: Re: Help regarding arabic in jsp	Nadim Shaikli	Yesterday 10:24:55
Projects	-	-			

726 messages, 296 unread.

Folder list, shows the default Kmail folders and user-managed folders. Move messages into folders by dropping them in this area

The message area, shows the message headers, the body and any attachments.

Re: C++ Unicode for arrabic

From: Omar Abdalla <omara@languagecomputer.com>
To: Development Discussions <developer@arabeyes.org>
Date: Tuesday 21:22:39

Nadir Durrani wrote:

```
> I have recently used C++ (borland C) for my assignments related to
> implement standard collation algorithm and the other assignment was
> related to generating appropriate initial, medial or final shapes for
> a string of unicode ... did this for Urdu and since Urdu uses Arabic
> script so I guess this might addresses what you are looking for... I
> used fstream.h to get unicode input from file...
>
> Regards...
```


More on KMail

- Composing a message
- *Kaddressbook*
- Spell checker
- Attachments
- Calendaring with *Korganizer*

Revision RHD-RHELDT3-20041201

Kaddressbook is the central address repository for KDE, it can search through LDAP (*Light-weight Directory Access Protocol*) directories.

Send message icons to either send immediately or to queue in the outbox folder

"Add attachment" icon, alternatively, attachments can be dropped directly onto the composer window

GPG support icons to sign and encrypt the message. Disabled here because GPG is not set up

Address book entries can be searched here. Kaddressbook supports searching in LDAP directories in addition to the local address book

This button invokes the address book to select addresses. Addresses can also be dropped from the address book directly onto the address field

Address book entries can be drag and dropped in any location that expects an address like the To: field in Kmail

List of attachments and their properties. Note that the encoding of files as attachments increases their size by about 30%

Saudi Aramco course - KMail

Message Edit View Options Attach Tools Settings Help

To: Tewfik Zitouni <tewfik.zitouni@opennet.ae>

emil.shaya@opennet.ae>

o course

hird release candidate of the Red Hat Desktop course
DF format.

e, will be ignored :)

nt

pai

Address Book Browser - KAddressBook

File Edit View Settings Help

Incremental search: im | Given Name

Given Name	Family Name
Adel	Ben Zarrouk
Almira	Yboa
Christophe	Diot
Emil	Shaya
Gianluca	Iannaccione
Imed	Chihi
Ons	Mrabet
Richard	Gass
Sehla	Lousayef
Sue	Moon
Tarek	Mastouri
Tewfik	Zitouni

Imed Chihi

Email address: imed.chihi@opennet.ae **Telephones:** Mobile: +971-50-348-7998
Work: +971-4-390-1943

Web page: http://www.opennet.ae/

Address:
Work Address:
Building 12, Office 103 - 500366
Bubai Internet City, Dubai
United Arab Emirates

Name	Size	Encoding	Type	Encrypt	Sign
tr-redhat-desktop-course-notes-rc3.pdf	763.8 KB	base64	PDF Document		

Column: 14 | Line: 8

Messaging with Evolution

- Ximian Evolution
- Gtk+ based
- Integration with MS Exchange
- Integration with SpamAssassin
- Supports LDAP directories
- Synchronisation with PDA devices

Revision RHD-RHELDT3-20041201

Ximian (now a Novell company) Evolution is an integrated Personal Information Management application that's very mature and very stable although it doesn't integrate very well with KDE. It has its own address book and calendar with a plugin to use Microsoft Exchange servers for shared calendaring.

Click here to view all folders including Inbox in a side frame, you can keep the frame visible by pinning it down

This view displays a summary of items pertaining to the current day like today's weather forecast, new messages, today's appointments and tasks due today. It has also a news feed display like *KNewsTicker*

The calendar view shows the appointments and the task list

The contacts manager maintains a local address book and can search LDAP directories just like *Kaddressbook*

From	Subject	Date
Imed Chihi <imed.chihi@opennet...>	Fwd: JPrayer's first release	Yesterday 10:38 AM
Imed Chihi <imed.chihi@opennet...>	Fwd: Re: CUPS in Action (need help :)	Yesterday 10:39 AM
Imed Chihi <imed.chihi@opennet...>	Fwd: Re: CUPS in Action (need help :)	Yesterday 10:39 AM
EmiratesLUG <emirateslug@...>	[dubailug] Celebrating FireFox v1.0	Yesterday 9:04 AM
Penny Lockwood <jclmplilqk...>	Re: Azazello opened the suitcase,	Yesterday 10:29 AM

From: Ahmad Khalifa <ahmad@khalifa.ws>
 To: Development Discussions <developer@arabeyes.org>

Nadim Shaikli wrote:
 > Could you then regenerate the .PS using a monospaced Arabic font for us
 > to see ? If all is well (and I think there were other issues with regards
 > to Harakat and composing characters taking too many spaces) then we should
 > proceed with getting this patch adopted - as it stands now it does a hell
 > of alot more with it than without it :-)

yeah sure, just need the monospaced font :?
 If you have a monospaced pfa font, try putting it inplace of
 Kacst-Qr.pfa and see what happens :)

regarding harakat, AFAIR it was fixed.

> NO, no, no - __never__ give up, please don't. This and others are very
 > important topics and we are very eager to complete 'em and again sorry for
 > my delay (why no one else stepped forward is a different story :-)

Lab 3: Messaging

Objectives

Configure Kmail to send and receive e-mail
Configure Evolution to send and receive e-mail
Use the KDE address book

Sequence 1 Setting up KMail

1. Click `Settings/Configure KMail...`
2. In *Identities*, change the *Default* identity by specifying at least *Your name* and your *E-mail address*, it's advisable to specify the *Organisation* and a *Signature*
3. In *Network*, specify at least one sending account and one receiving account, make sure you uncheck "*Delete message from server after fetching*". Kmail should be able to send and receive mail
4. Try sending a message with an attachment to your neighbour

Sequence 2 Setting up Evolution

1. Start Evolution and follow the steps suggested by the wizard, make sure you provide a correct e-mail address and a valid full name
2. Set the receiving server, make sure you tick "*Leave messages on server*"
3. Set the sending server
4. Set your time zone and finalise
5. Try sending a message with an attachment to your neighbour

Sequence 3 Practise the use of Kaddressbook

1. Open Kaddressbook from its icon in Kmail
2. Add some contacts to Kaddressbook
3. Try to drag contacts into Kmail composer
4. If available, try to add the company's LDAP directory to Kaddressbook search sources

Red Hat Desktop

Unit 4 OpenOffice.org

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Lab 4: OpenOffice.org	65

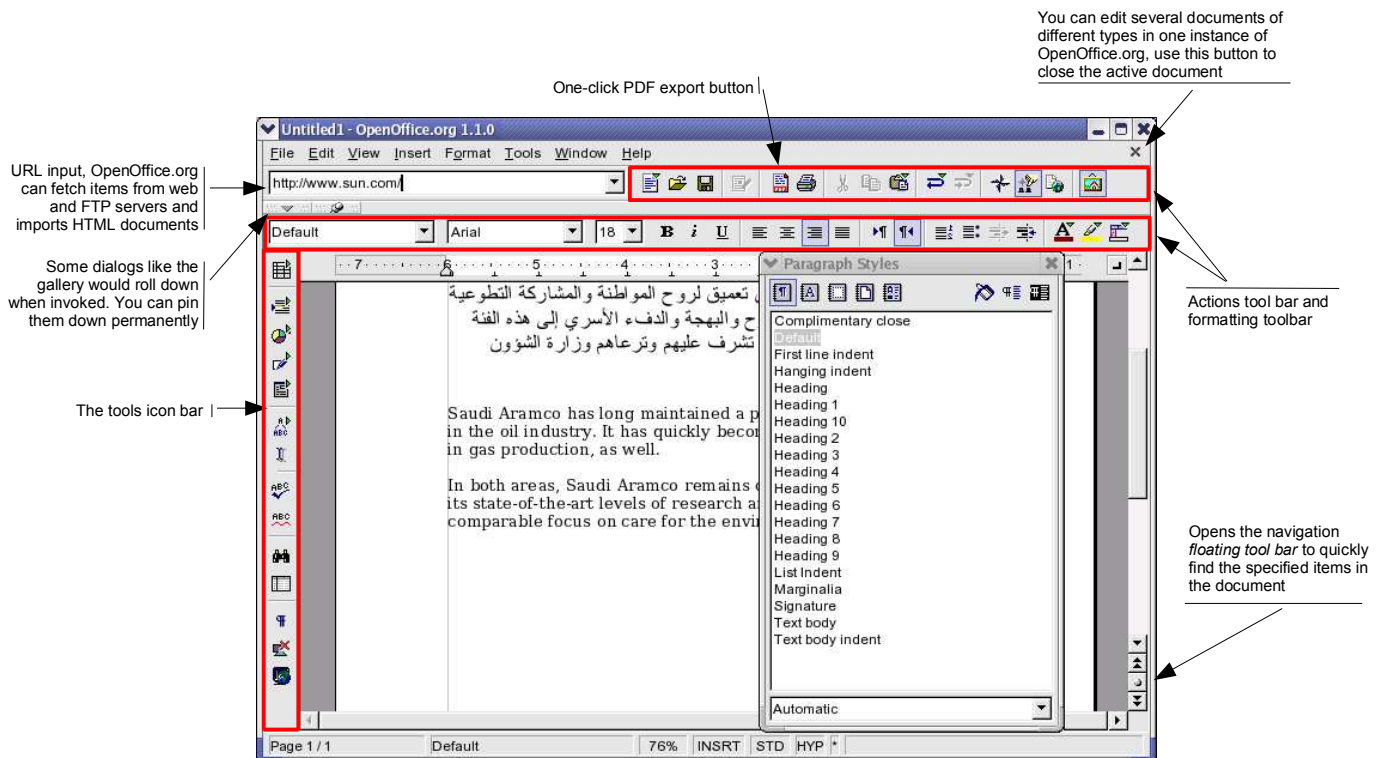
Office suite

- Meeting OpenOffice.org
- Writer, Calc, Impress, Draw, Math
- Native storage format is XML
- For Linux, Windows, Solaris, hp-ux, Mac OS X, etc.
- *Complex Text Layout* – Arabic and Asian languages
- Compatibility with MS Office
- PDF exports

Revision RHD-RHELDT3-20041201

OpenOffice.org is a very powerful and **complete** open source office suite, it includes a word processor, spreadsheet, presentation, vector drawing and mathematical formulae editor. It is the community-maintained version of *Sun StarOffice*. Sun bought the German maker of StarOffice, Star Division GmbH, in 1999. Sun StarOffice and OpenOffice.org are nearly the same software, Sun's edition comes with support for enterprise users.

One of the great features of OpenOffice.org is its ability to export all the documents it creates to the infamous Portable Document Format (Adobe **PDF**). It has powerful filters to export to and import files from **MS Office** applications that is Word, Excel and PowerPoint.



Calc, Impress, Draw and Math

- Spreadsheet-like database interface
- Table calculations in Writer
- 2-D and 3-D charts
- Different views (master, slides, notes, etc)
- Many transition effects with sounds
- Generate 2-D and 3-D graphics

Revision RHD-RHELDT3-20041201

OpenOffice.org Math uses a powerful syntax to render **mathematical** expressions, here is an example:

```
size 10 {\PI_{S^e} = int_{A^e} \frac{1}{2} \left( \frac{\partial^2 w}{\partial x^2} \cdot D \cdot \left( \frac{\partial^2 w}{\partial x^2} + \nu \frac{\partial^2 w}{\partial y^2} \right) + \frac{\partial^2 w}{\partial y^2} \cdot D \times \left( \nu \frac{\partial^2 w}{\partial x^2} + \frac{\partial^2 w}{\partial y^2} \right) + 2 \frac{\partial^2 w}{\partial x \partial y} \cdot D (1 - \nu) \frac{\partial^2 w}{\partial x \partial y} \right) dA}
```

$$\Pi_{S^e} = \int_{A^e} \frac{1}{2} \left[\frac{\partial^2 w}{\partial x^2} \cdot D \cdot \left(\frac{\partial^2 w}{\partial x^2} + \nu \frac{\partial^2 w}{\partial y^2} \right) + \frac{\partial^2 w}{\partial y^2} \cdot D \times \left(\nu \frac{\partial^2 w}{\partial x^2} + \frac{\partial^2 w}{\partial y^2} \right) + 2 \frac{\partial^2 w}{\partial x \partial y} \cdot D (1 - \nu) \frac{\partial^2 w}{\partial x \partial y} \right] dA$$

The left screenshot shows the OpenOffice.org Calc spreadsheet application. The data table is as follows:

	July	August	September
1 Products	85	96	106
2 Support	208	251	302
3 Training	152	166	184
4 Consulting	409	401	422

The 3D chart 'Sales for Q3' displays these values as bars for each product category across the three months. The right screenshot shows the OpenOffice.org Impress presentation application. The slide content includes Arabic text and a diagram of the OpenOffice suite components: Writer, Calc, Impress, Draw, and Math. The diagram shows how these applications are interconnected and can be used together.

Calc supports 256 sheets, 32000 rows and 256 columns

3-D charts can be rotated freely in all directions

Printing

- Kprinter
- Special printers
- Faxing
- Non-KDE applications
- Beautifying text files
 - Unix legacy tools
 - Postscript and PDF

Revision RHD-RHELDT3-20041201

Kprinter manages all printing requests in KDE, it can also process print jobs originating from non-KDE applications and even from shell programs. Kprinter manages some **Special Printers**, which are not actual printing devices but a software system that processes the print job to convert it to PDF and send it as an attachment with Kmail for example. To print a file from the shell, you can use: `cat panic.c | kprinter` or just `kprinter panic.c`.

To make Mozilla and FireFox use Kprinter, go in File/Print..., select Print To: Printer/Properties and set the Print Command to kprinter. To do the same with Acrobat Reader, go in File/Print... and in Print To: Printer set Command to kprinter.

There are some tools to process text files and prepare them for printing. Some do basic formatting like `pr`, `fmt` and `indent` and others do conversion like `enscript`, `ps2pdf` and `a2ps`. In certain situations Kprinter would invoke these tools to pre-process print jobs.

Apart from *Adobe Acrobat Reader*, your Red Hat Desktop should include the KDE PostScript and PDF viewer: *KGhostView*.

The screenshot shows the 'Print - Konqueror' dialog box. It is divided into several sections:

- Printer Selection:** Shows the selected printer 'HPLaserJet' and its state 'Idle (accepting jobs)'. It includes fields for 'Location' (Office 103, Building 12), 'Comment', and 'Output file' (home/med/print.ps).
- Job Properties:** A section for setting properties like banners, pages per sheet, and paper format.
- Page Selection:** Options to print 'All', 'Current', or a 'Range' of pages. The 'Page set' is currently 'All Pages'.
- Copies:** A section for setting the number of copies (currently 1), with options for 'Collate' and 'Reverse'.
- Print System:** A dropdown menu showing 'CUPS (Common UNIX Print System)' is currently used, connected to 'localhost:631'.

Annotations point to various parts of the dialog:

- 'Printer selector, there special printers like Mail to PDF, Print to PDF file, Print to PostScript file and Send to fax'
- 'Adds a printer using the KDE Add Printer Wizard, requires access to the print server'
- 'Sets the properties of the printer for the job about to be printed, settings can be saved to apply to future jobs submitted to this printer. Sets things like banners, pages per sheet, paper format and others'
- 'Shows a preview of the printout before actually sending to the printer'
- 'Settings of the job about to be printed, this part of the dialog can be displayed and hidden using the Expand/Collapse button'
- 'Printing system to use, set as recommended by the Systems Administrator'

Lab 4: OpenOffice.org

Objectives

- Create and publish documents with OpenOffice.org Writer
- Create and publish documents with OpenOffice.org Impress

Sequence 1 Setting up the KDE *Public File Server*

1. Click on the panel and select *Panel Menu/Add/Applet/Public File Server*
2. Click on the freshly added applet and select *New Server...*
3. Select your directory to share (root directory of KPF), preferably set it to `/home/userXX/public_html`
4. Pick a port number (default is 8000)
5. Point your browser to `http://stationXX.example.com:8000/`, set the port according to step 4.

Sequence 2 Using OpenOffice.org Writer

1. Start OpenOffice.org Writer
2. Enable CTL support from *Tools/Options.../Language Settings/Languages*
3. Start typing some text, possibly multilingual, and try to include:
 - Graphics drawn using the left tool bar,
 - A spreadsheet using the the *Insert/Object/OLE Object.../Spreadsheet*
 - Graphics inserted from the gallery
4. Save the document to `/home/userXX/public_html`
5. Export it to PDF, then to HTML in the same directory and check it using your web browser

Sequence 3 Using OpenOffice.org Impress

1. Start OpenOffice.org Impress
2. Start typing some text, possibly multilingual, try to include:
 - Graphics drawn using the left tool bar,
 - A spreadsheet using the the *Insert/Object/OLE Object.../Spreadsheet*
 - Graphics inserted from the gallery
4. Save the document to `/home/userXX/public_html`
5. Export it to PDF, then to HTML in the same directory and check it using your web browser
6. Export it to Macromedia Flash in `myflash.swf` and use Mozilla Composer to create the following HTML document:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">
<html>
<head>
  <meta content="text/html; charset=ISO-8859-1" http-equiv="content-type">
  <title>Flash example</title>
</head>
<body style="background-color: rgb(255, 255, 255); color: rgb(0, 0, 0);" alink="#000099"
link="#000099" vlink="#990099">
  <span style="font-weight: bold;">Example Flash movie</span><br>
  <br>
  <object height="400" width="550">
    <param name="movie" value="myflsh.swf">
    <embed src="myflash.swf" height="400" width="550">
  </object><br>
  <br>
</body>
</html>
```


Red Hat Desktop

Unit 5 Customising KDE

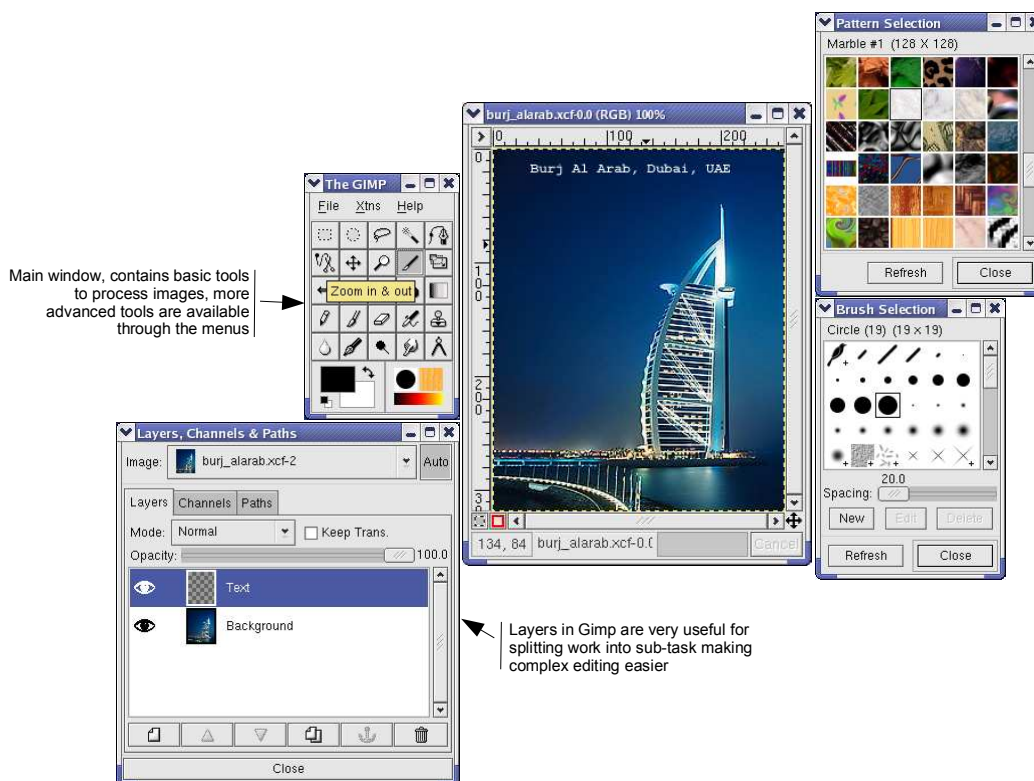
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PIM	71
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Image processing

- The Gimp
- Image conversion
- Image indexing
- Adobe Photoshop clone
- Animations – GIF and video
- Photo finishing

Revision RHD-RHELDT3-20041201

Gimp reads and writes graphics files in about 30 different formats. It is meant for processing raster graphics and not vector graphics like in OpenOffice.org Draw. Gimp processing can be automated through scripting using **Script-Fu**, a Gimp-specific programming language to perform all kinds of editing automatically.

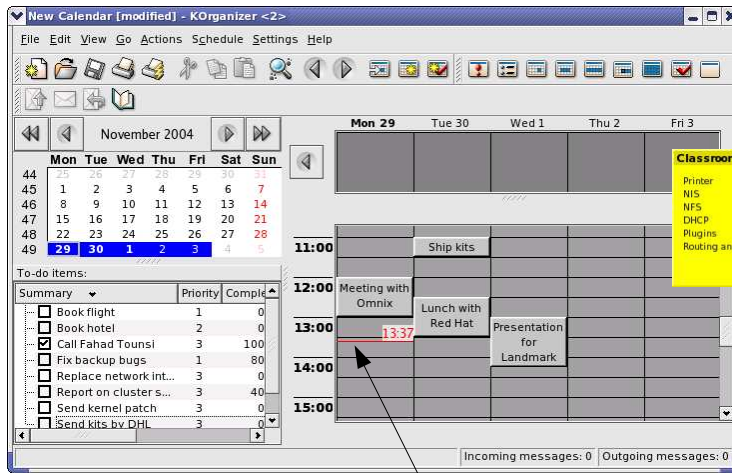


PIM

- Kmail – e-mail messaging
- Korganizer – calendaring and todo list
- Kaddressbook – contact management
- Knotes - “PostIt(tm)”-like notes
- Kontact – integrated PIM environment

Revision RHD-RHELDT3-20041201

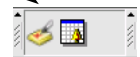
Personal Information Management in KDE is implemented by many independent tools like Korganizer, Kmail, Kpilot, Knotes and so on. Future releases will be integrated in a common interface called *Kontact*.



KOrganizer

This is the *Marcus Bains* line, it shows the current time

For more convenience, Knotes and Korganizer would keep running once their windows closed. They can be quickly accessed from the panel's applets

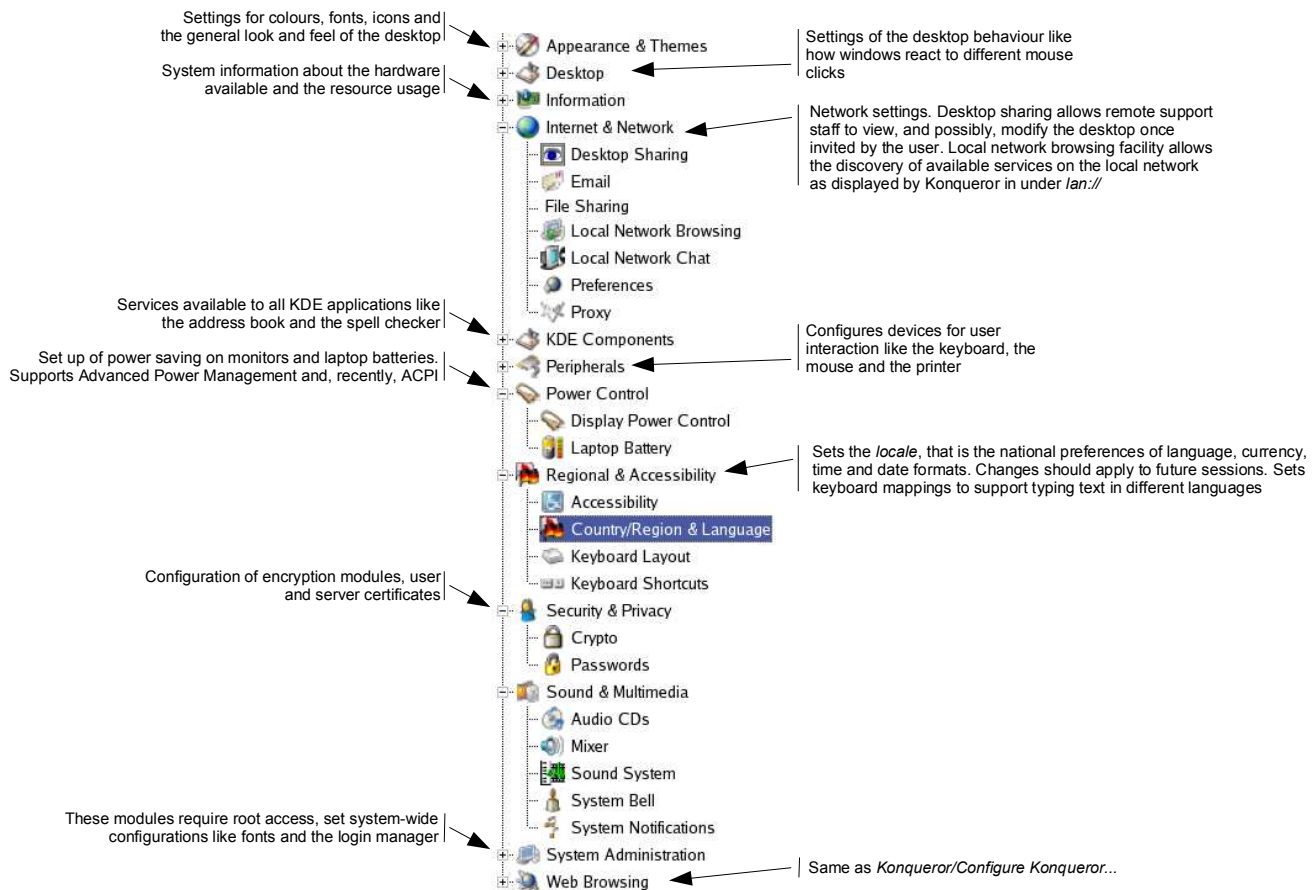


Customising KDE

- KDE Control Center
- The desktop
 - Links
 - Special icons
- The panel
 - Applets
 - Launchers

Revision RHD-RHELDT3-20041201

All KDE configuration is stored in the hidden directory `.kde/` in the home directory of the users, you can backup your KDE configuration by just storing this directory to a safe location. Configurations would affect all KDE applications and, to a lesser extent, Qt and X Window applications. Some applications have their own configuration options like composing options in Kmail, the generic settings are controlled from a central location: **KDE Control Center**.



A customised KDE

- MS Windows look and feel
- New behaviour of windows
- New icon set
- Some changes applied to OpenOffice.org

Revision RHD-RHELDT3-20041201

Here is an example of some KDE customisations, some applications have their own configuration options.

The screenshot shows a KDE desktop environment with several windows and a K menu. Annotations point to various features:

- Default system icons changed globally:** Points to the desktop icons like Trash, Firefox, and the K menu.
- Colours and fonts changed for KDE applications:** Points to the title bar and window borders of the OpenOffice.org window.
- All entries in the menu can be edited. A whole new menu can be designed by the user:** Points to the K menu.
- By default a double click on the title bar shades the window, now it maximises/minimises it mimicking MS Windows:** Points to the title bar of the OpenOffice.org window.
- Complex Text Layout enabled in OpenOffice.org through Tools/Options.../Language Settings/Languages:** Points to the OpenOffice.org window showing Arabic text.
- All launcher items can be selected by the user. Right click on an item to move it or to delete it. You can drag items from the K menu and drop them here. You can drag item from here and drop them on the desktop:** Points to the desktop icons.
- Using X Window settings, non KDE applications can adopt the same colours and fonts:** Points to the OpenOffice.org window.
- Applet for switching the keyboard layout to support typing in various languages, here Arabic and English:** Points to the keyboard layout applet in the system tray.

Lab 5: Customising KDE

Objectives

Configure the desktop's look and feel
Set up a functional remote desktop support facility
Review applets

Sequence 1 Change the desktop appearance

1. Open *Control Center*
2. Pick your favourite settings from the *Appearance & Themes* and *Desktop* menus

Sequence 2 Set up *Desktop Sharing*

1. Open *Control Center*
2. Go in *Internet & Network/Email* and provide your contact information
3. Go in *Internet & Network/Desktop Sharing* and click *Create & Manage Invitations...*
4. Click new *Email Invitation...* and send one to your neighbour. In real world, you'll be sending it to the desktop support staff, so you may want to include some problem description in the message
5. You've probably received an e-mail invitation from your neighbour by now
6. Click on the link that says `vnc://invitation@...`, alternatively start *K Menu/Internet/More Internet Applications/Remote Desktop Connection* and type in the URL you received by e-mail.

In real world, you'd start a phone conversation with the support staff while they guide you through the steps to explain or to fix an issue.

Sequence 3 Insert and remove the Dictionary applet

1. Click on the panel with the left mouse button
2. Select *Panel Menu/Add/Applet/Dictionary*
3. Observe the addition of a new applet to the panel
4. Query the dictionary for some term
5. Select *Panel Menu/Remove/Applet/Dictionary*

Notes

Lined area for taking notes, consisting of approximately 28 horizontal lines.

Red Hat Desktop

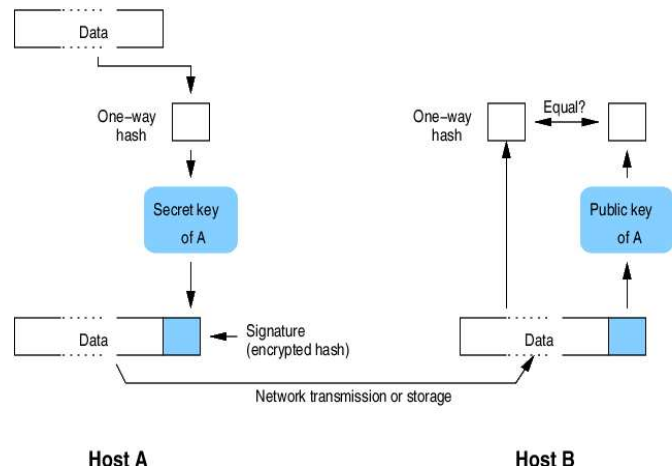
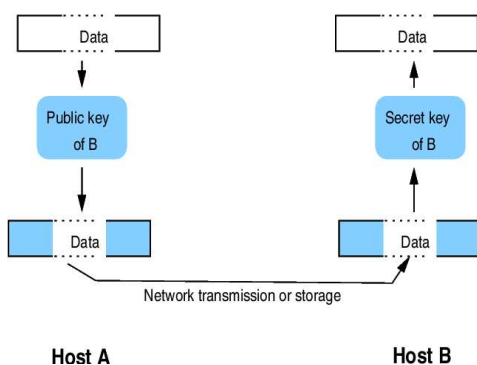
Unit 6 Security and encryption

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Secure computing with Linux

- OpenSSL
- OpenSSH
- Gnu Privacy Guard (GPG)
- E-mail encryption and signing

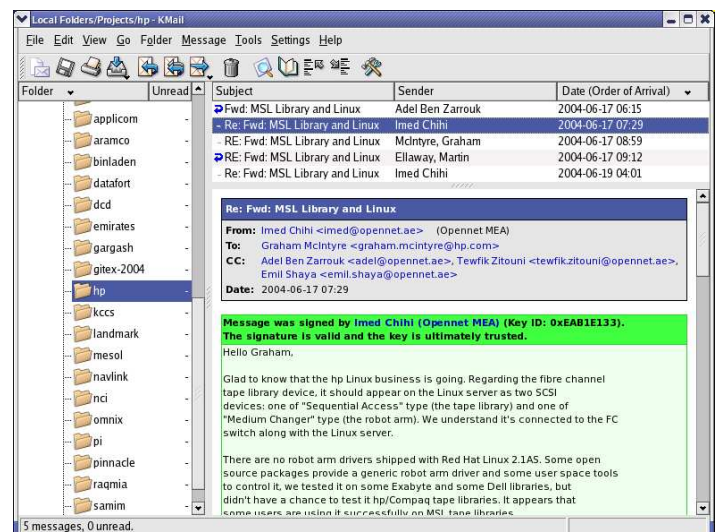
Revision RHD-RHELDT3-20041201



The modern approach to secure communications is to use asymmetric encryption. For this you'll need a pair of keys: one private to be kept secret and one public to be distributed to all parties wishing to send you secure content.

In large enterprises, the infrastructure that manages these key pairs is called a *Public Key Infrastructure* (PKI).

Gnu Privacy Guard is an open source package that implements the algorithms to perform signing and encryption.



Kmail displaying a signed message

Lab 6: Security and encryption

Objectives

Generate a pair of keys
Use GnuPG to encrypt and sign messages sent by KMail

Sequence 1 Generate keys

1. Open the terminal emulator, *Konsole*
2. Type `gpg -gen-key`
3. Answer with the defaults then provide your name, e-mail address and organisation. Pick a *passphrase*, that's a password to access the private key

Sequence 2 Set up KMail to use GnuPG

1. Open KMail
2. Go in Configure *KMail.../Security/OpenPGP/Encryption Tool* and select "*GnuPG – Gnu Privacy Guard*"
3. Go in Configure *KMail.../Identities/Advanced/Change...*
4. Select your key and confirm

Sequence 3 Distribute your public key to the neighbours

1. Start to compose a new message in KMail
2. Select *Attach/Attach My Public Key*
3. Send the message to the parties you intend to communicate with securely

Sequence 4 Import and sign the public keys of the neighbours

1. Save the keys you received as attachments to different files
2. Open the terminal emulator, *Konsole*
3. To import the key, type `gpg -import public_key.asc`
4. To sign the key, type `gpg -sign-key <email id of the neighbour>`
5. Loop at 3. to import and sign all received public keys

Now you can start KMail to send and receive signed and encrypted messages.

Red Hat Desktop

Unit 7 Integrating Linux

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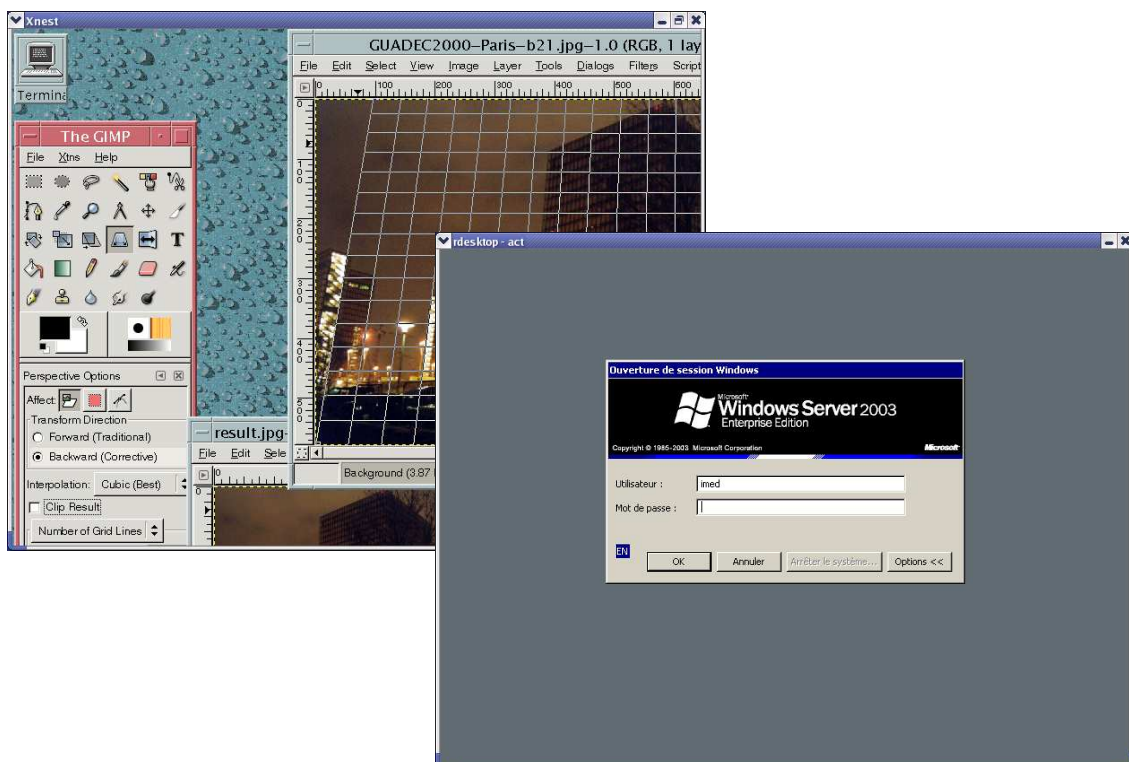
Integrating Linux

- MS Windows network file systems
- MS Windows servers
- Unix network file systems
- MS Windows disks
- Converting text files

Revision RHD-RHELDT3-20041201

The default Red Hat settings allow you to read and write **FAT** floppies to exchange data with MS Windows computers. You can open sessions on Unix computers using *Xnest* or the *VNC protocol*, using `Xnest -query solaris.opennet.ae :1` would open an X Window session on the solaris server. In a similar fashion you can connect to an MS Windows server with Terminal Services using *rdesktop* (RDP client).

When moving text files across Linux/Unix, MS Windows and MacOS systems you need to pay attention to line terminations. Unix/Linux use a line feed (LF) character to mark the end of a line whereas MS Windows uses a *carriage return* followed by a line feed (CRLF). Use `dos2unix` and `unix2dos` to convert text files.



Lab 7: Integrating Linux

Objectives

Connection to remote Unix sessions using X Window
Connection to remote MS Windows servers using RDP
Test OpenOffice.org import and export filters

Sequence 1 Use Xnest

1. Open a terminal emulator, the *Konsole* window
2. Type `Xnest -query server1.example.com :1`

Sequence 2 Use *rdesktop*

1. Open a terminal emulator, the *Konsole* window
2. Pick an MS Windows server in your organisation which provides Terminal Services
3. Type `rdesktop <ms windows server name or ip address>`

Sequence 3 Import MS Office documents

1. Download some MS Office documents from your office
2. Open them with OpenOffice.org
3. Evaluate the import filter quality

Sequence 4 Browse the local MS Windows network

1. Open Konqueror
2. Type `lan://`
3. Search for known SMB hosts and log in to access your files

Sequence 5 Read and write MS Windows floppies

1. Pick a DOS formatted floppy
2. Insert in your desktop's drive
3. Double click the floppy icon
4. Drag and drop files to the floppy

