VISTA SOLUTIONS

HP World 2004

Linux Desktop Hands On

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Seminar Agenda

- Introduction – What is a Desktop and What is it For?
- Linux and the X-windows System
- Desktop Customization
  - Linux Desktop Startup
  - Configuring the *gdm* Login Manager
  - Finding Your Way Around the Desktops
  - Desktop Customization: Wheee!
- ***Lab 1: Using and Customizing the Linux Desktops***
- Useful Graphical Tools for Your Linux Desktop
  - gkrellm
  - Web Tools
  - The Nautilus File Browser
  - Ximian Evolution Organizer
  - Xcdroast
- ***Lab 2: Useful Graphical Tools***
- Linux and Microsoft® Windows® Interoperability
  - Mounting SMB Shares
  - Using OpenOffice
  - Running MS Office Tools with Crossover Office
  - Running MS Windows and Tools with VMware
- ***Lab 3: Knoppix***

Introduction: About this Session

- **The Linux® distribution being used for this session is Red Hat Fedora Core 2**
- **Fedora is the new free version of Red Hat® Linux, based entirely on open-source software**
- **Fedora Core 2 incorporates :**
  - The new 2.6 version of the Linux kernel
  - XFree86 version of the Xorg X11R6 X-windows Server
  - Familiar open-source and GNU tools
  - GNU Object Model Environment (GNOME) version 2.6
  - K Desktop Environment (KDE) version 3.2

Setting Some Expectations …

- **Warning!**

This seminar is intended for Linux desktop users who have little or no exposure to Linux. If you just spent a week in Linux boot-camp, or if you have years of experience with Linux, then this seminar will be too basic for you.

Introduction

- **We use a graphical user interface, called a “desktop”, every day**
- **What is the purpose of a desktop?**
- **Some answers:**
  - Presents a consistent “look and feel” to unify applications
  - Provides consistent window management
  - Integrates file handling and application behavior
  - Schedules applications
  - Enables communication between application components
  - Hides the underlying complexity of the operating system
  - ***Provides a familiar, easy-to-use environment that allows us to be productive with our applications and data***

Desktop Components (Nuts and Bolts)

- **Hardware** (Graphics, Sound, Mouse, Keyboard)
- **X-server** (xorg)
- **Libraries** (GTK+, Redhat Bluecurve, etc.)
- **Login subsystem** (GDM, KDM, etc.)
- **Window manager** (twm, WindowMaker, *lots* more …)
- **Messaging and execution** (ORBit CORBA broker)

Desktop Components (high-level)

- **Control Center**
  - Configures desktop settings
- **Desktop Icons**
  - Represent files, programs, menu items, and other “objects”
- **File Manager**
  - Allows graphical manipulation of files
- **Display Manager**
  - Controls window and desktop behavior
- **Session Manager**
  - Restores and manages user application “state”
- **Panels and Menus**
  - Access to applications and status information

Desktops and the X-windows System

- **The desktops on Linux are all based on the X-windows system**
- **The implementation of the X-windows server is XFree86 from *http://www.XFree86.Org*, see also http://www.X.Org for the "stewardship" of X11**
- **There are several useful commands that you can use with the Linux X-windows server:**

• Ctrl-Alt-Backspace	Immediately kill the server
• Ctrl-Alt-*Keypad+*	Next video mode (resolution)
• Ctrl-Alt-*Keypad-*	Previous video mode
• Ctrl-Alt-F1 … Ctrl-Alt-F12	Switch to virtual terminal (Ctrl-Alt-F7 is default graphics)

Making Your Own Choices: “xdm” and “startx”

- **The good old X-windows stuff is still around!**
  - xdpyinfo — Give information about current display
  - xset — Set various X-windows options
  - xrdb — Set display and client resources
  - xinit and startx — Start up X-windows session
- **So, if you want complete control, use “*xdm*”, and your *~/.xinitrc* file:**

```
xrdb        –load ${HOME}/.Xresources
xsetroot    –solid gray &
xterm       –geometry -60+60 &
xconsole    –geometry -0+0 &
exec twm
```

Choice is What Makes the World Go Around

- **There are *lots* of desktop choices on Redhat Linux and Fedora:**
  - GNOME
  - KDE
  - Ximian GNOME (add-on, replaces “standard” GNOME)
  - “Many, many more window managers and environments”

- **Three main environments are run out of the */etc/inittab* file:**
  - GNOME → GDM
  - KDE → KDM
  - X → XDM

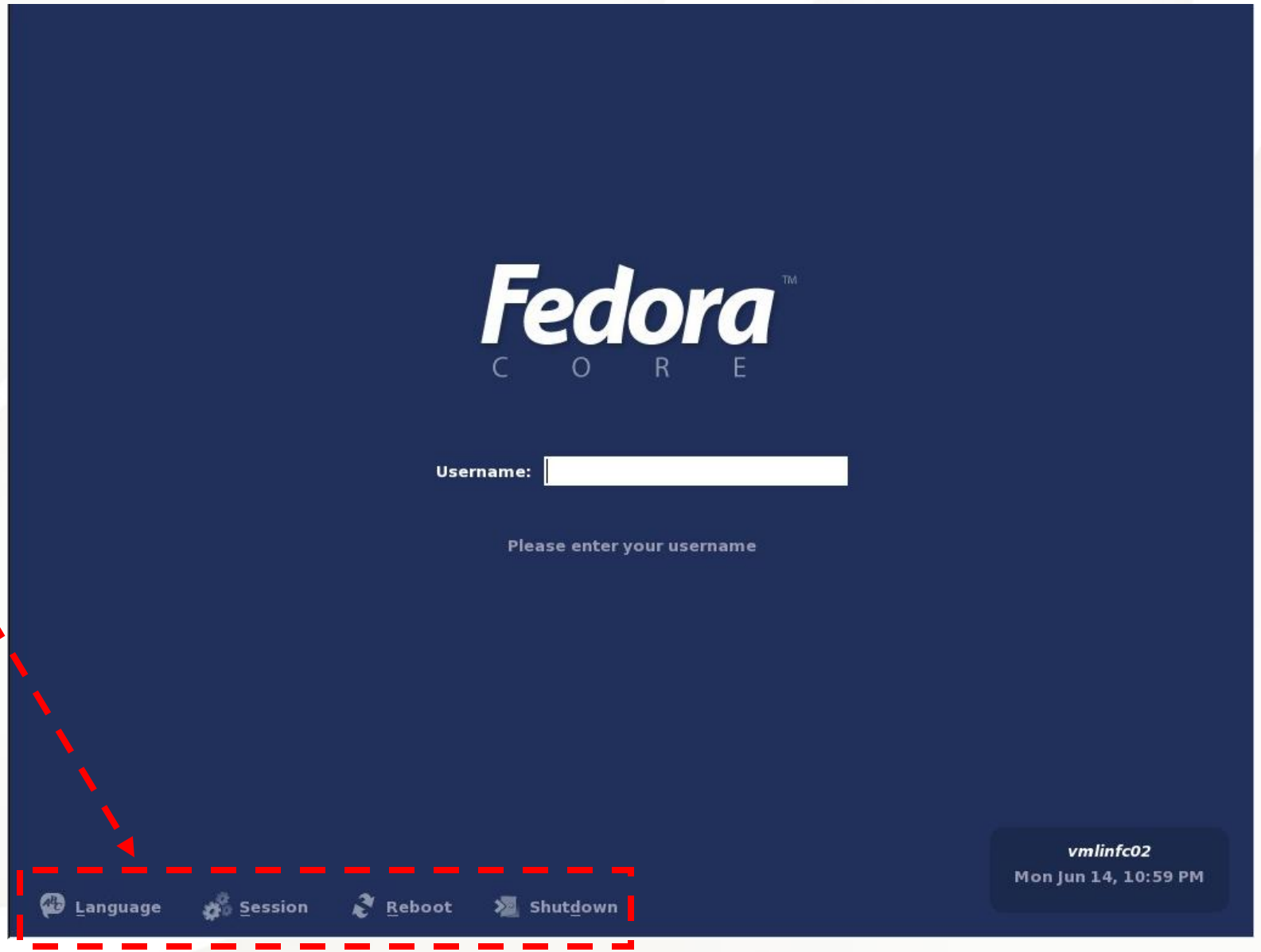
- **These are started by the following line in */etc/inittab*:**

  x:5:respawn:/etc/X11/prefdm -nodaemon

- **Note that */etc/X11/prefdm* is a script that checks for the existence of */etc/sysconfig/desktop* which defines “DESKTOP=GNOME” if that was the primary *system-wide* default desktop selected during installation**

Default Login Screen

Notice the control options *prior* to login



Choosing a One-Time Desktop Session

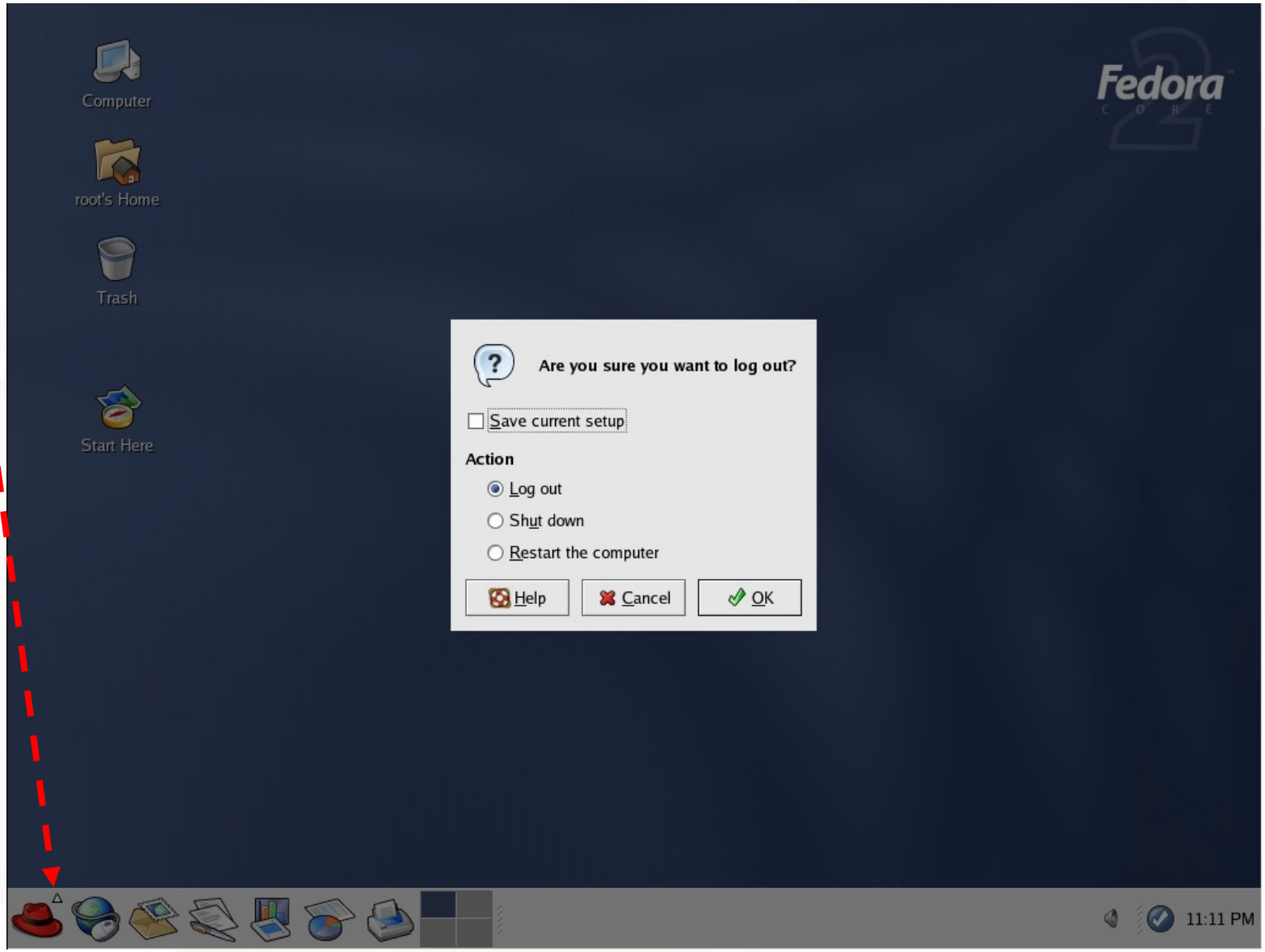
To select either GNOME or KDE at login time, click "Session" then choose

Logging Into a GNOME Session

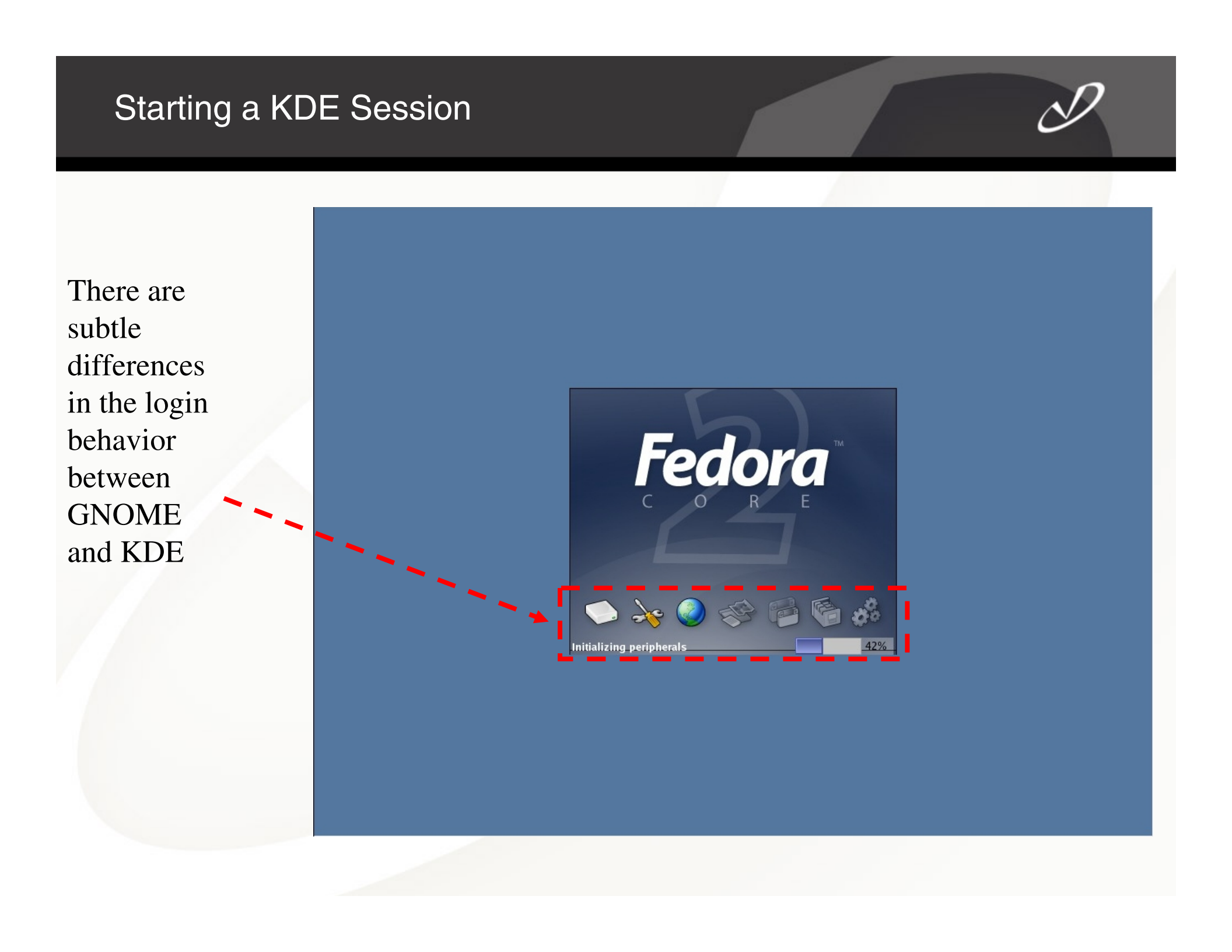
Login progress is shown on the splash screen. This is useful for debugging if the login hangs …

Logging Out of GNOME

Logging out is selected from the main menu or by selecting “logout” from the “right-click” desktop menu. The session manager will prompt for saving the current state of your desktop.



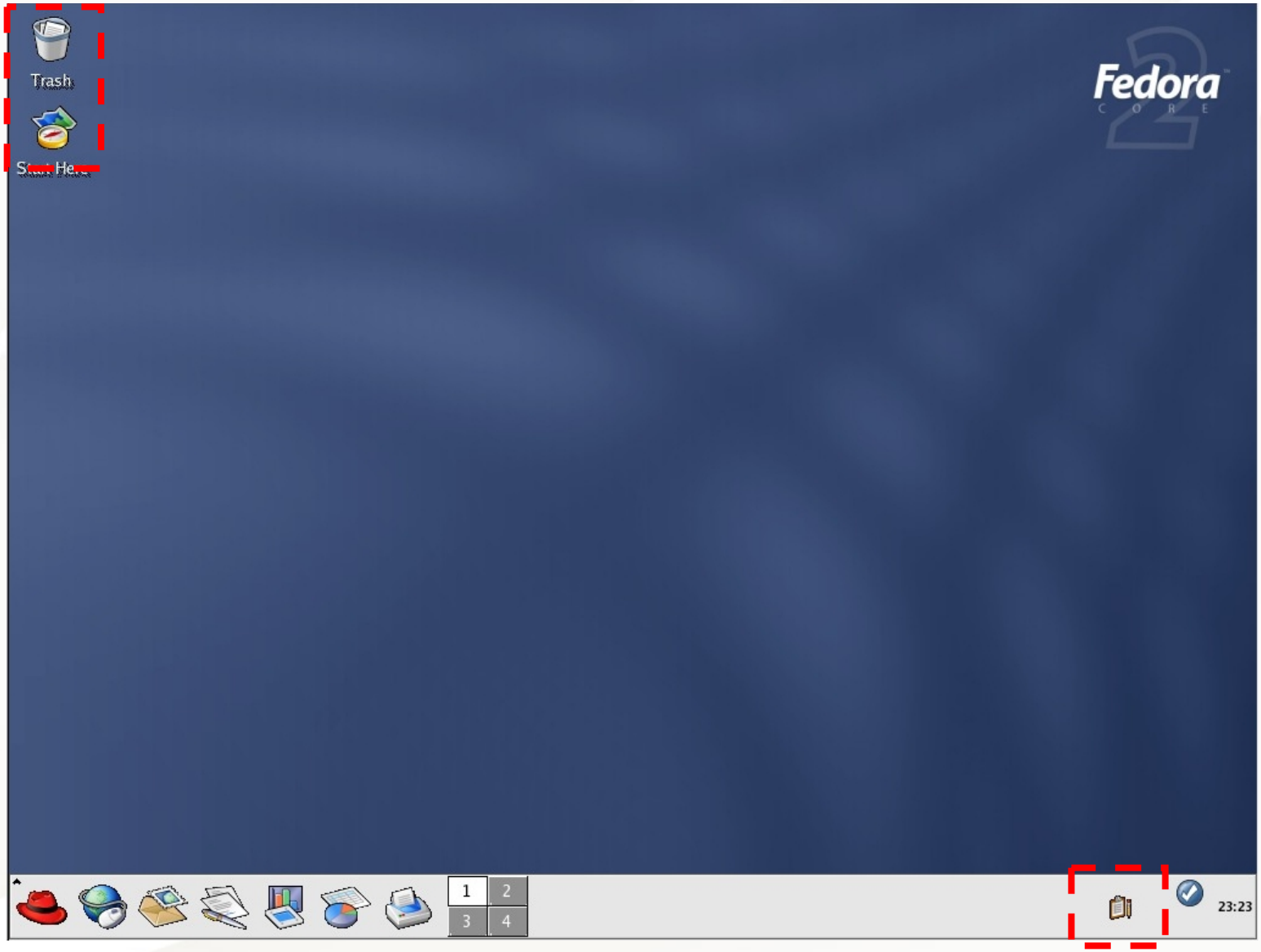
Starting a KDE Session



There are subtle differences in the login behavior between GNOME and KDE

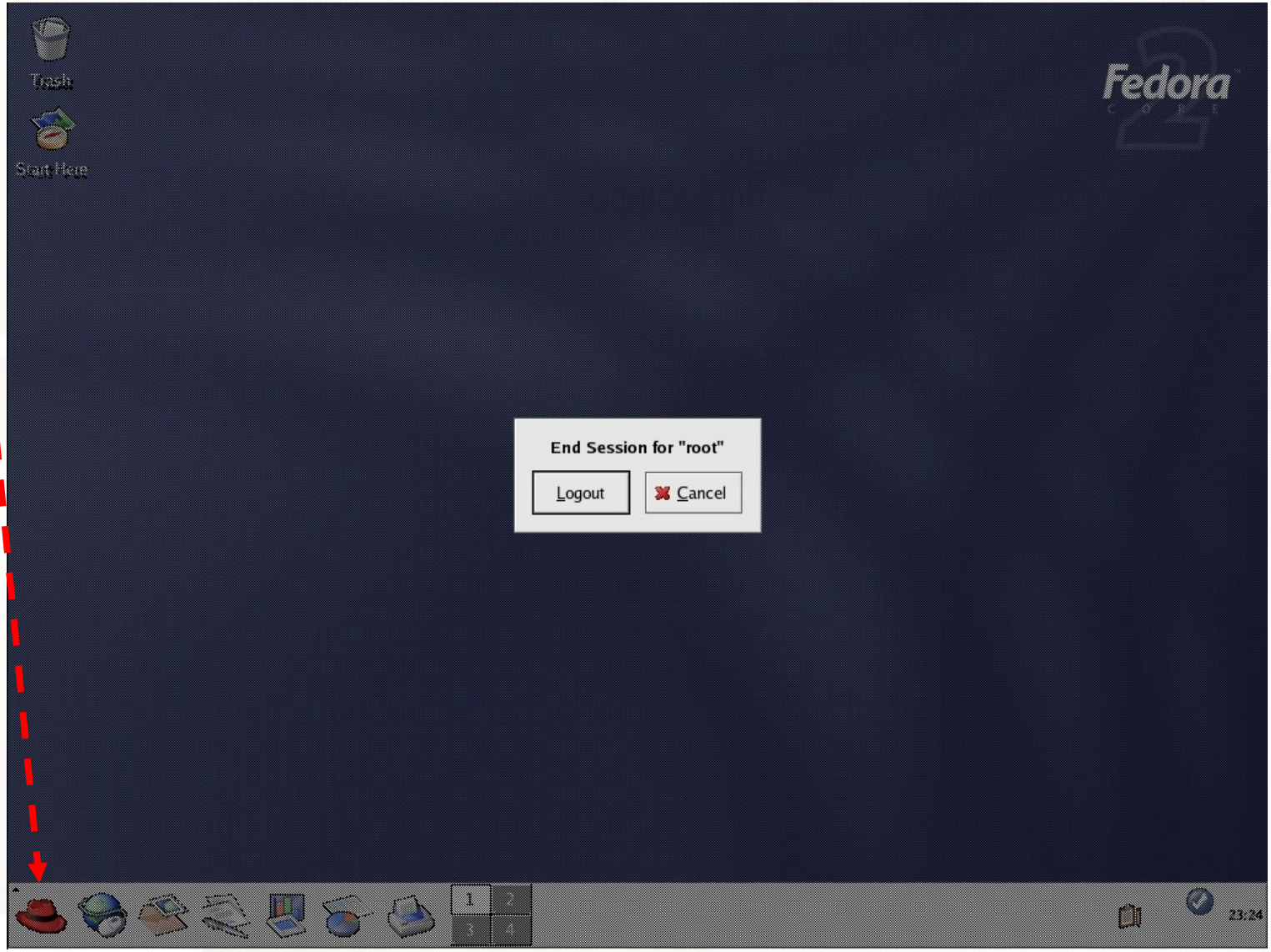
Which Desktop Are We Looking At?

Redhat uses a "look and feel" called "Bluecurve" to make the KDE and GNOME environments look similar. We need to look for clues to determine which one we are using. This is KDE.



Logging Out of KDE

Logging out is selected from the main menu or by selecting “logout” from the “right-click” desktop menu. The session manager does not prompt for saving the session.



Switching Desktops from Within Your Session

You can run "*switchdesk*" with no parameters, and it will graphically query for your choice.

You can also run the command in text mode: "*switchdesk kde*" will switch to KDE as your default desktop.

The command alters the *~/.Xclients* file to use your *~/.Xclients-default* to launch the proper desktop session manager. Other displays might get involved if there is a *~/.Xclients${HOST}${DISPLAY}* file in your home directory.

This is either *gnome-session*, *startkde*, or */usr/X11R6/bin/twm*. Other desktop environments might be used if they have been loaded (i.e. WindowMaker).

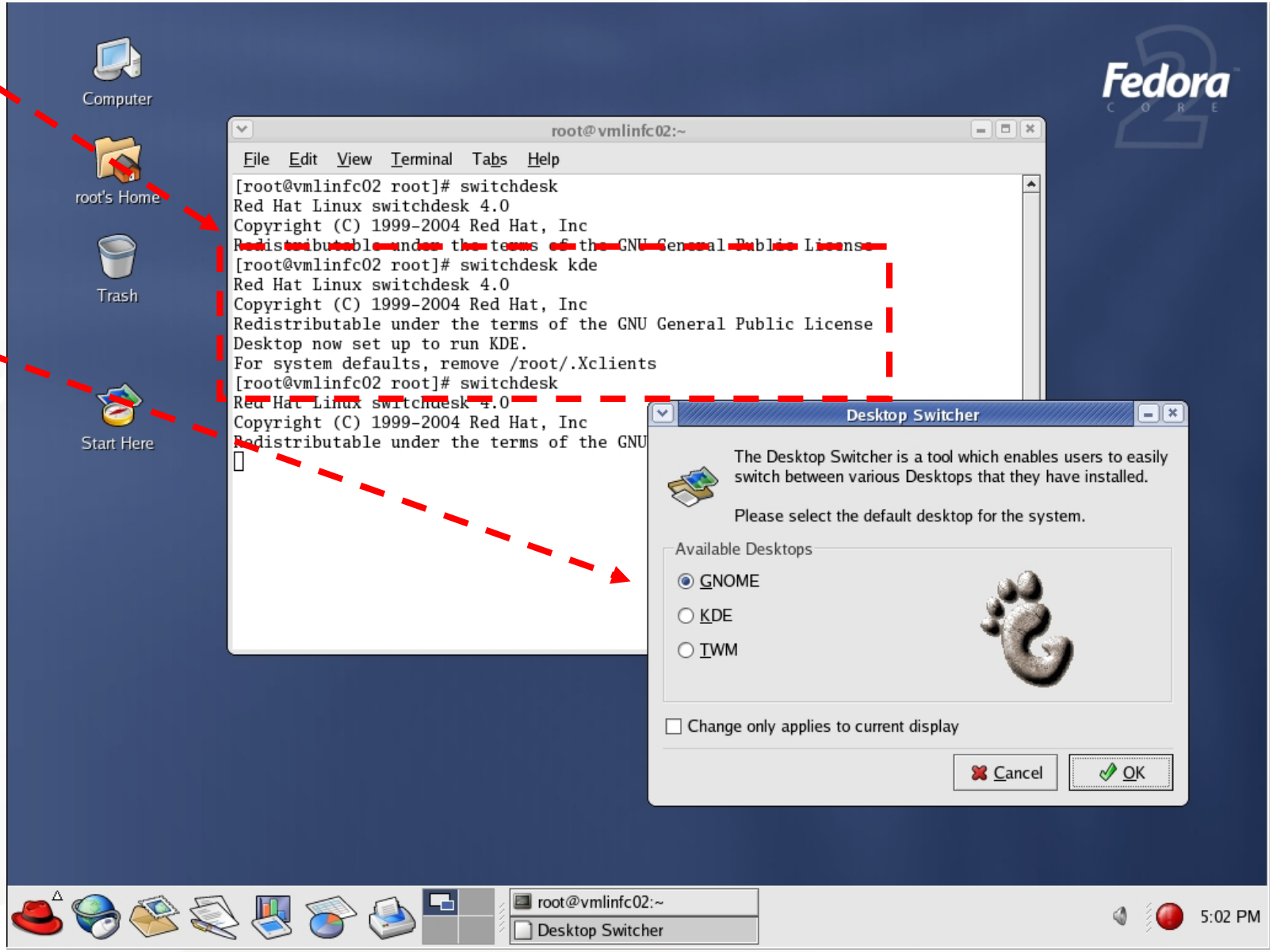
A “switchdesk” Example

Text-based switching,

-or-

using a GUI

If no command-line parameter is specified, the GUI will start (if the switchdesk-gui RPM is installed.)



What “switchdesk” Really Does …

~/.Xclients

```
#! /bin/bash
# Created by Red Hat Desktop Switcher
if [ -e "$HOME/.Xclients-$HOSTNAME$DISPLAY" ]; then
   exec $HOME/.Xclients-$HOSTNAME$DISPLAY
else
   exec $HOME/.Xclients-default
fi
```

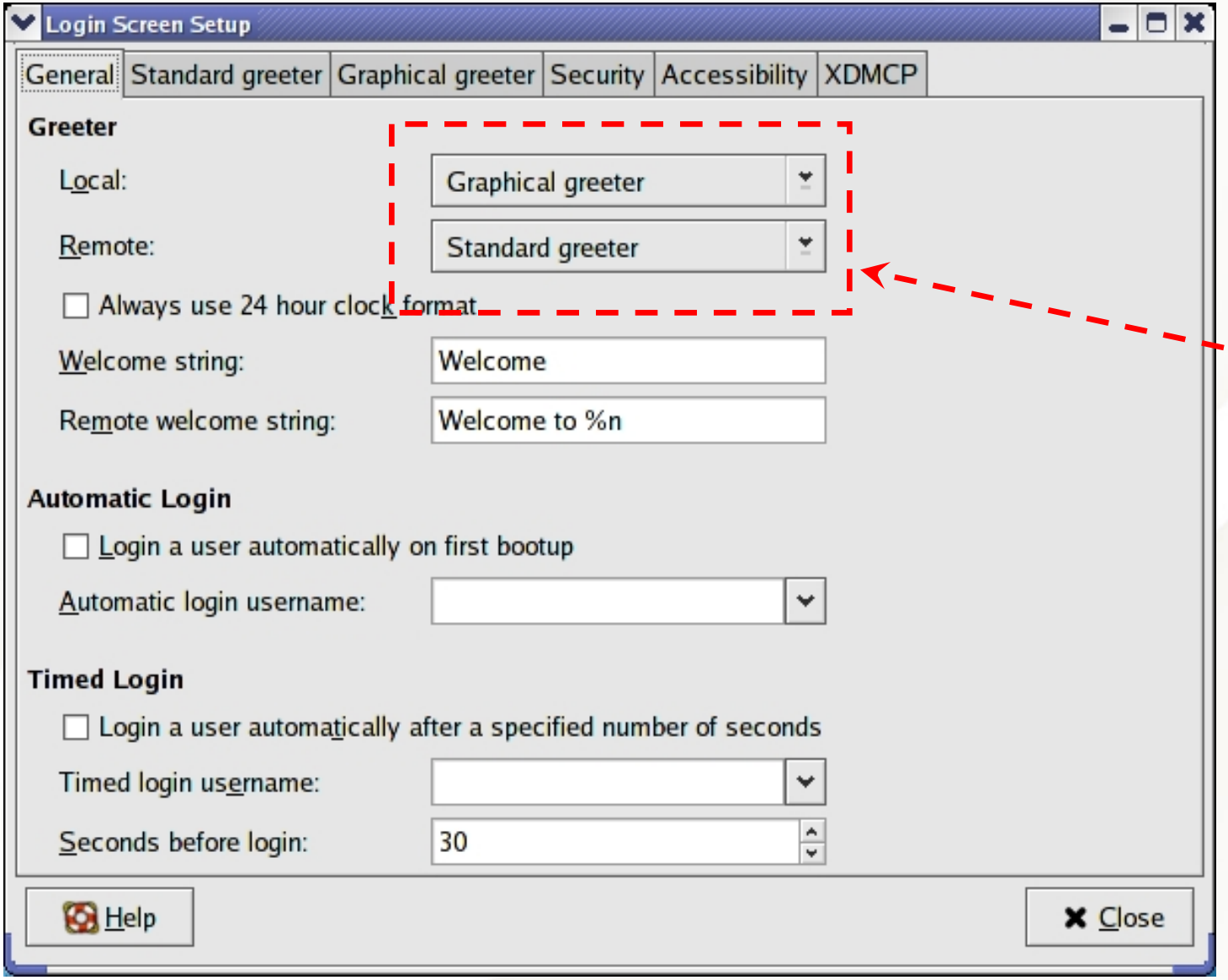
~/.Xclients-default

```
#! /bin/bash
# Created by Red Hat Desktop Switcher
if [ -e "$HOME/.Xclients-$HOSTNAME$DISPLAY" ]; then
   exec $HOME/.Xclients-$HOSTNAME$DISPLAY
else
   exec $HOME/.Xclients-default
fi
-bash-2.05b$ cat .Xclients-default
#! /bin/bash
# Created by Red Hat Desktop Switcher
WMPATH="/usr/bin /opt/bin /usr/local/bin /usr/X11R6/bin"
for wm in $WMPATH ; do
       [ -x $wm/startkde ] && exec $wm/startkde
done
exit 1
```

Configuration for Login Managers

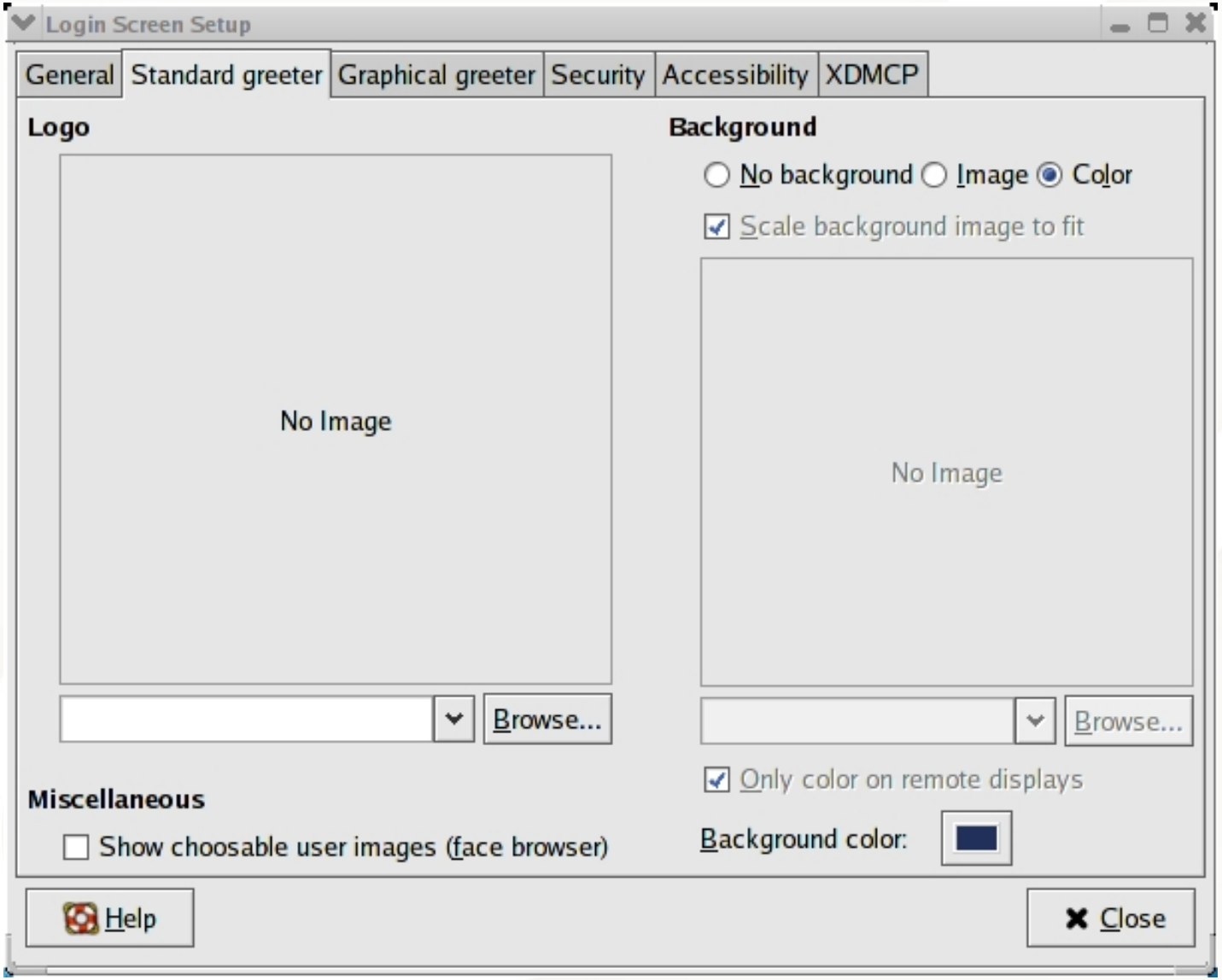
- **You will find a lot of the files involved in the X11 login process in the directory *`/usr/lib/X11`***
- **Many of the files in *`/usr/lib/X11`* are links to *`/etc/X11`***
- **The "standard" Redhat configuration uses *gdm* as the login display manager**
- **The configuration information for *gdm* is kept in *`/etc/X11/gdm/gdm.conf`***
- **There is a graphical tool *"gdmconfig"* that will set up the options for you**
- **Underneath the *`/etc/X11/gdm`* directory are *Init*, *PreSession*, *Session*, and *PostSession* directories containing scripts that implement the desktop login and logout behavior**

The "*gdmsetup*" Tool



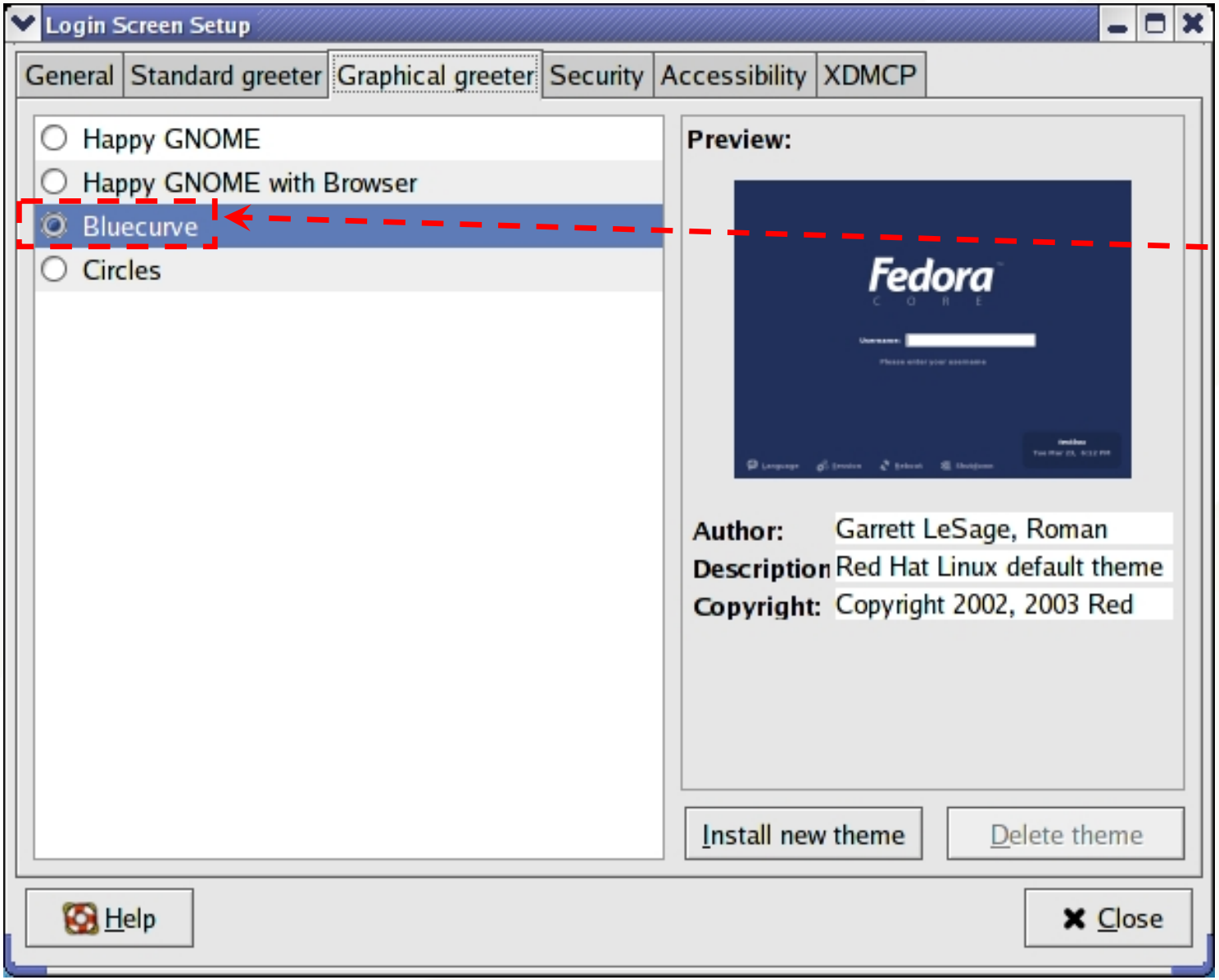
Two main ways to login: Local and Remote. These map to "on a locally attached display" or "on an XDMCP managed display (x-terminal)"

The "*gdmsetup*" Tool (continued 1)



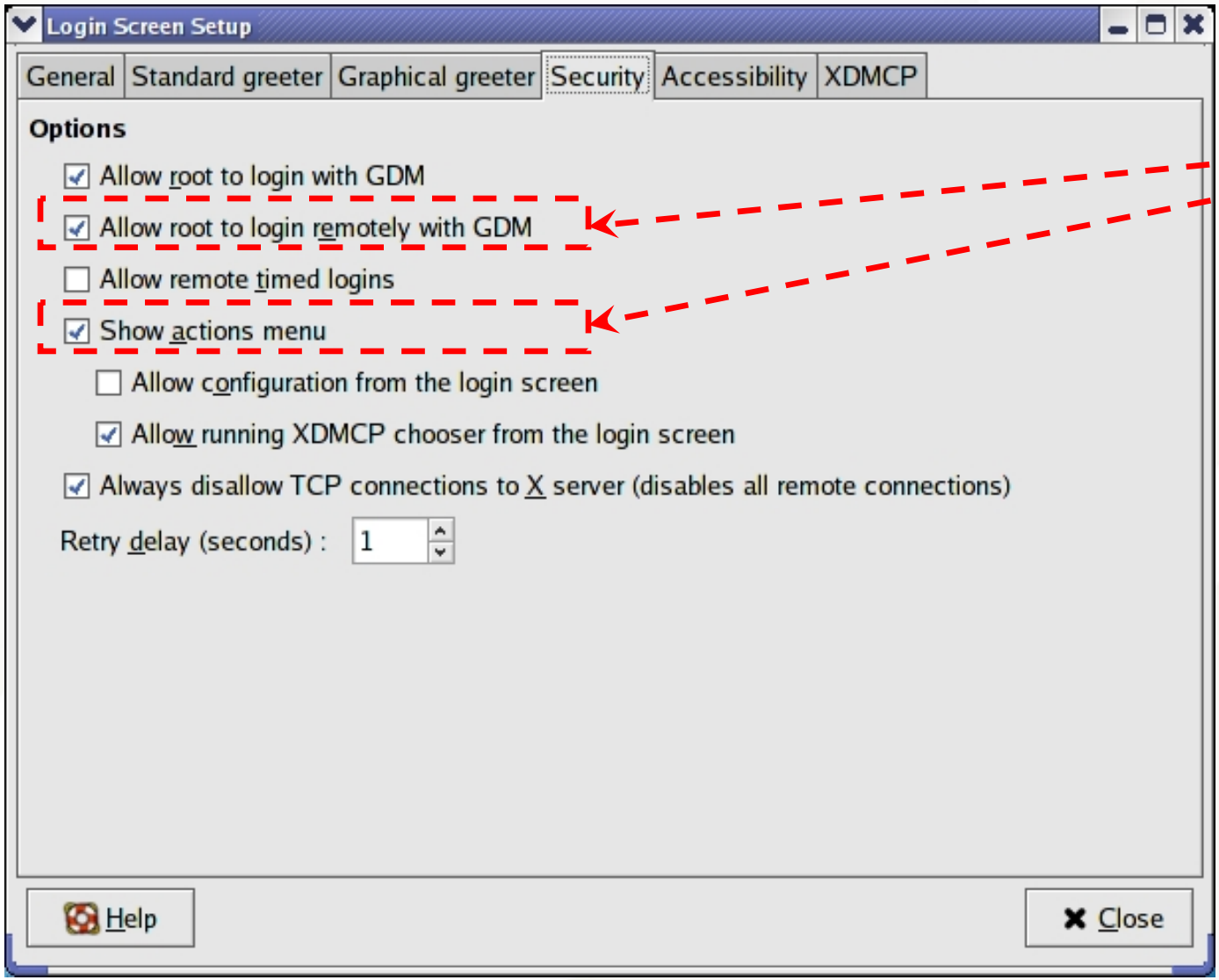
Remote login is not configured by default to use any graphical information.

The "*gdmsetup*" Tool (continued 2)



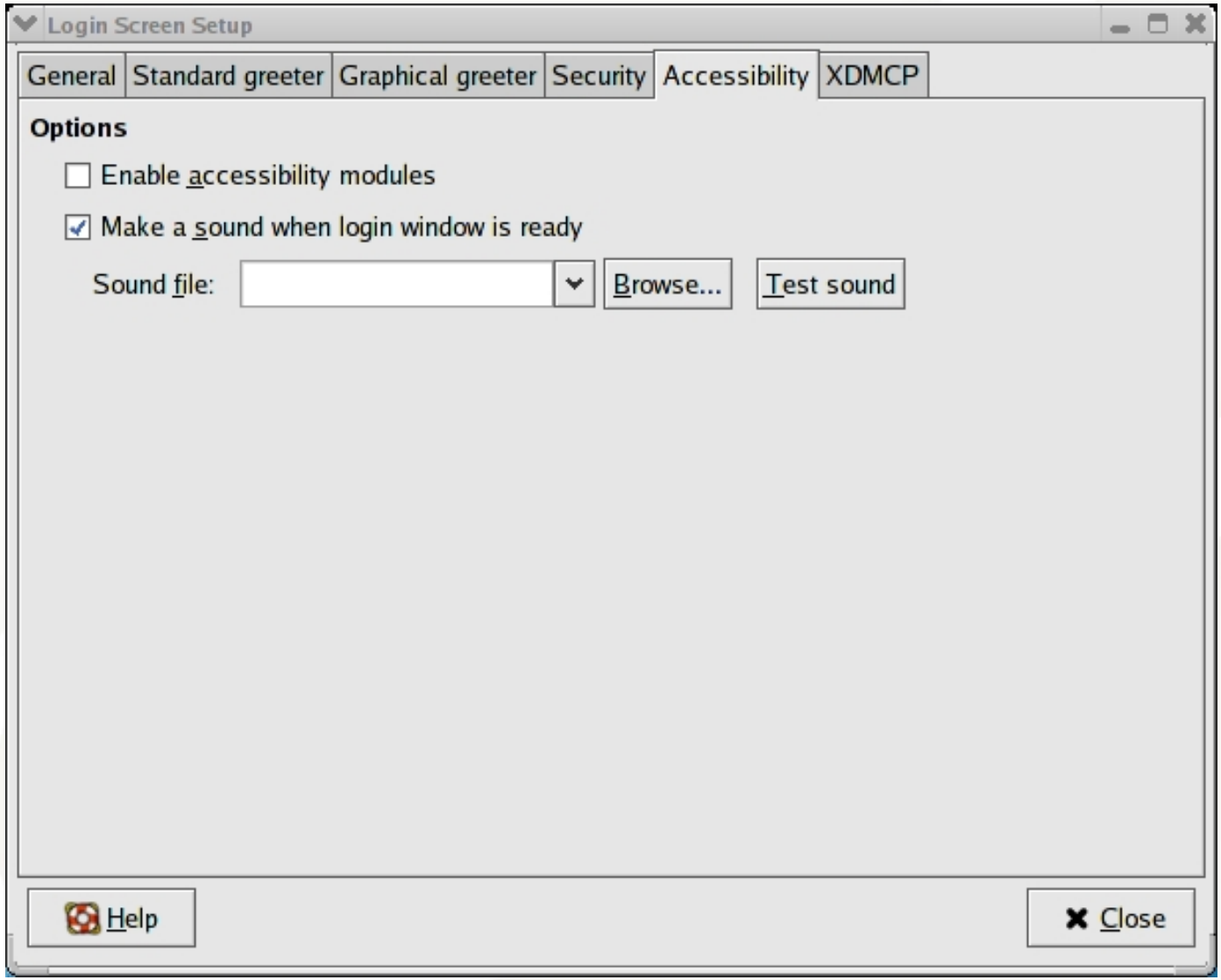
Does this look familiar? Note that the "Bluecurve" theme is the "look and feel" that Redhat uses to make GNOME and KDE look similar. This probably comes from an underlying X-windows toolkit (library). GNOME and KDE each have their own by default.

The "*gdmsetup*" Tool (continued 3)



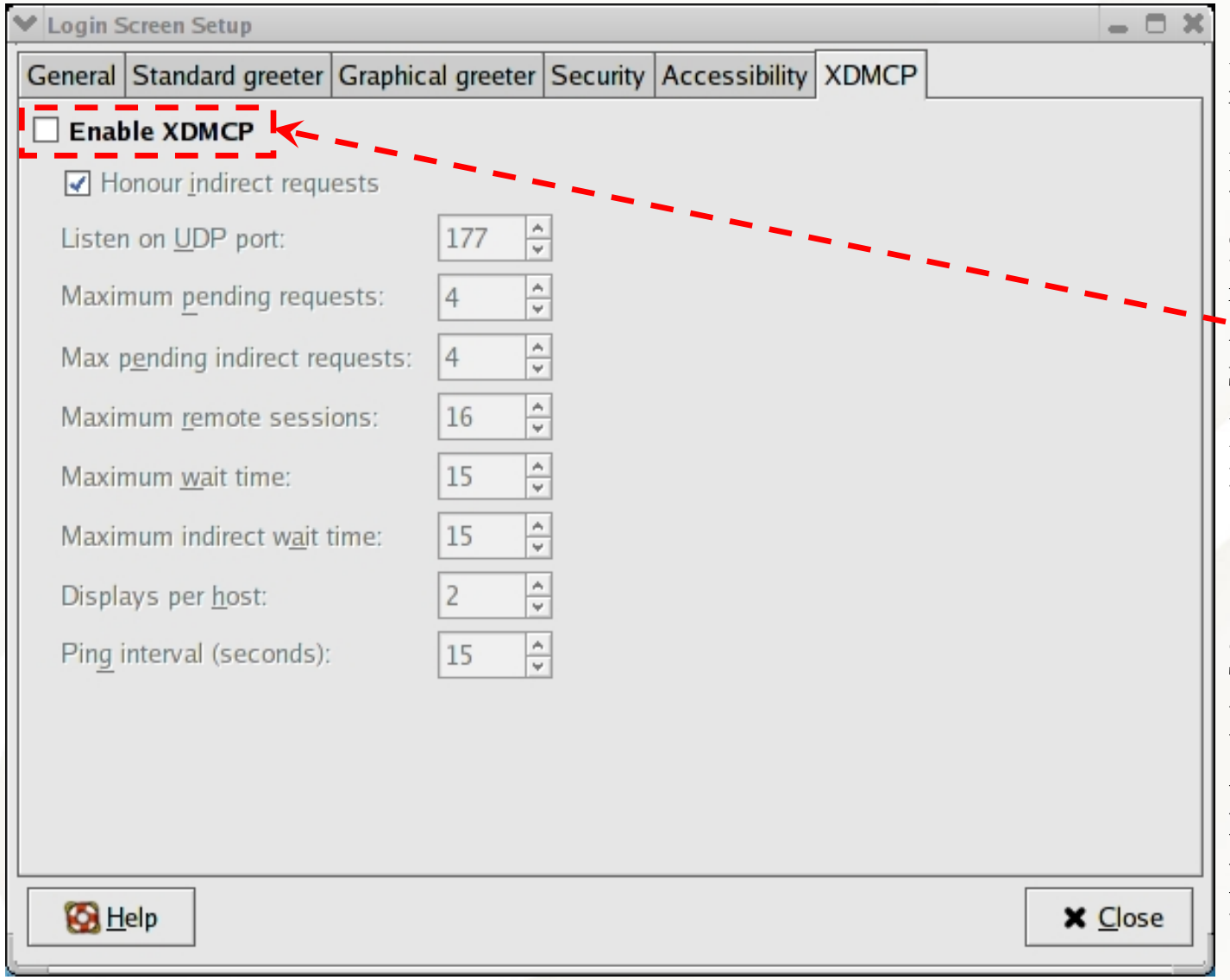
Security for graphical login may be (partially) controlled here

The "*gdmsetup*" Tool (continued 4)



Accessibility options for login are configured here.

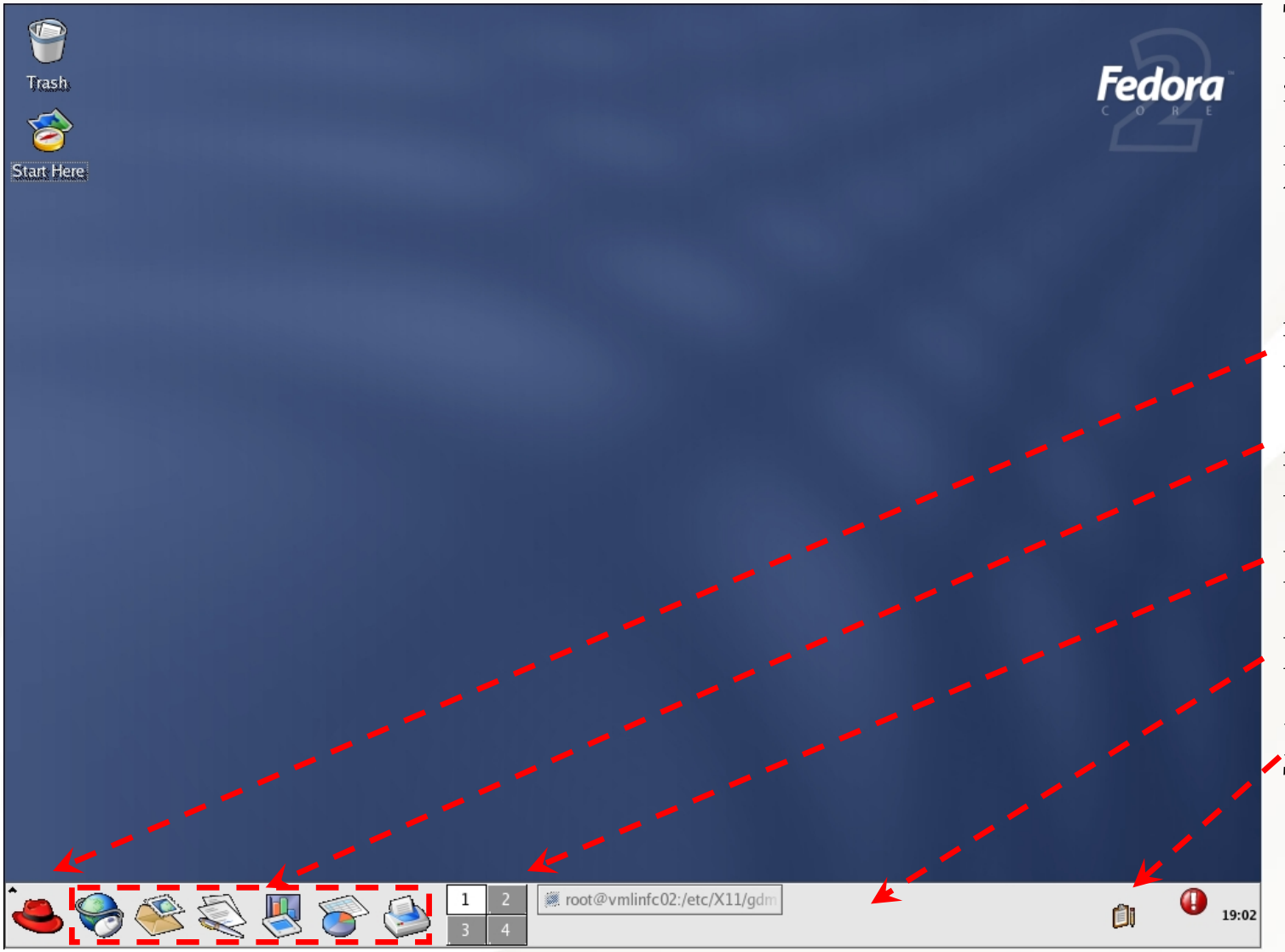
The "*gdmsetup*" Tool (continued 5)



Support of remote X-servers on Windows machines or X-terminals may be controlled here. XDMCP is a broadcast request handled by *xdm*. The desktop runs locally, the display is remote.

Also, check out the Linux Terminal Server Program (LTSP) and several other Linux-based X-terminal projects. LTSP is located at *www.ltsp.org*.

Default KDE Session



This is what you get, default when you log into KDE for the first time.

Application Menu

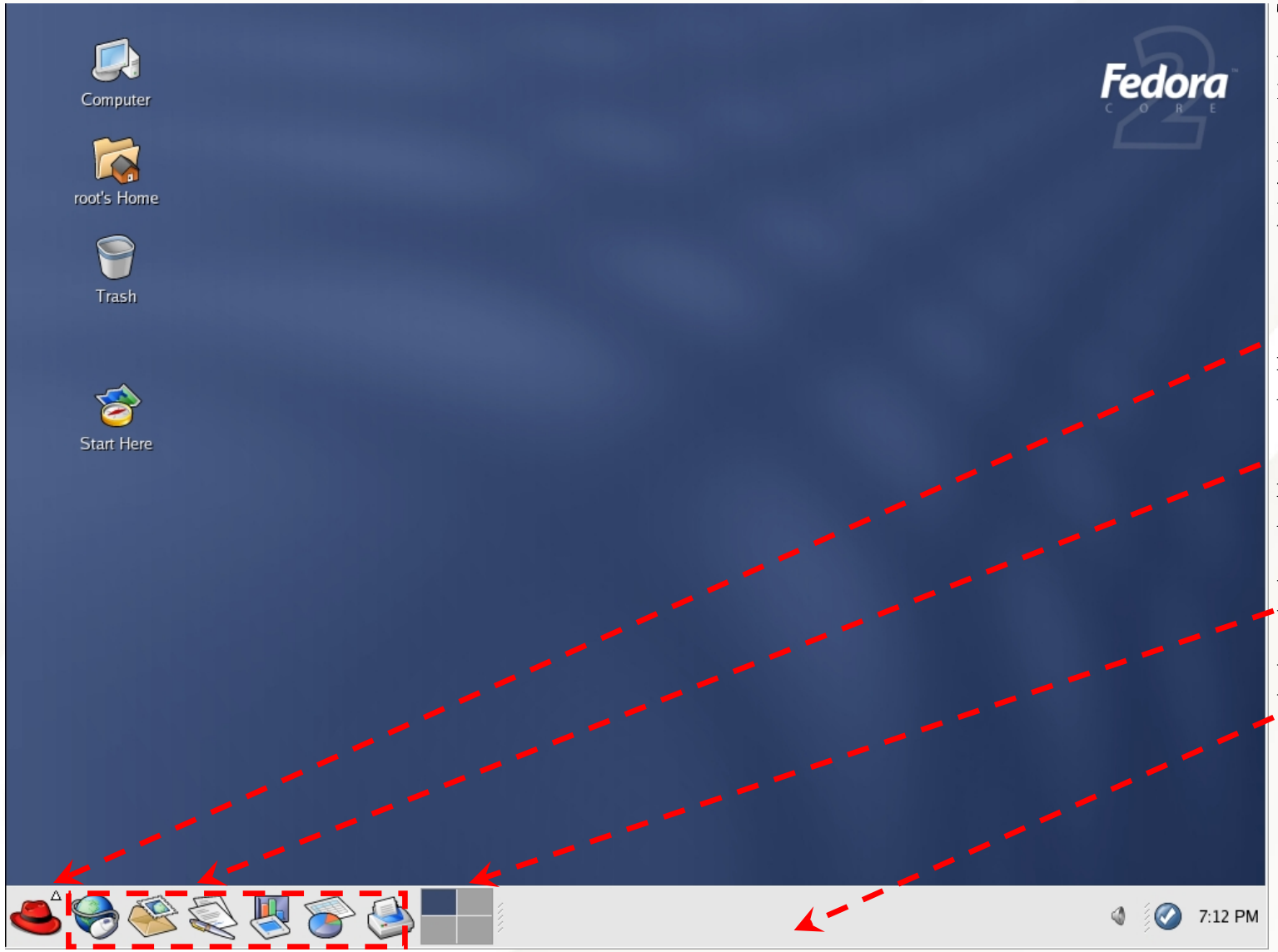
Application Launchers

Desktop Pager

Panel

KDE Clipboard Tool

Default GNOME Session



This is what you get, default when you log into GNOME for the first time.

Application Menu

Application Launchers

Desktop Pager

Panel

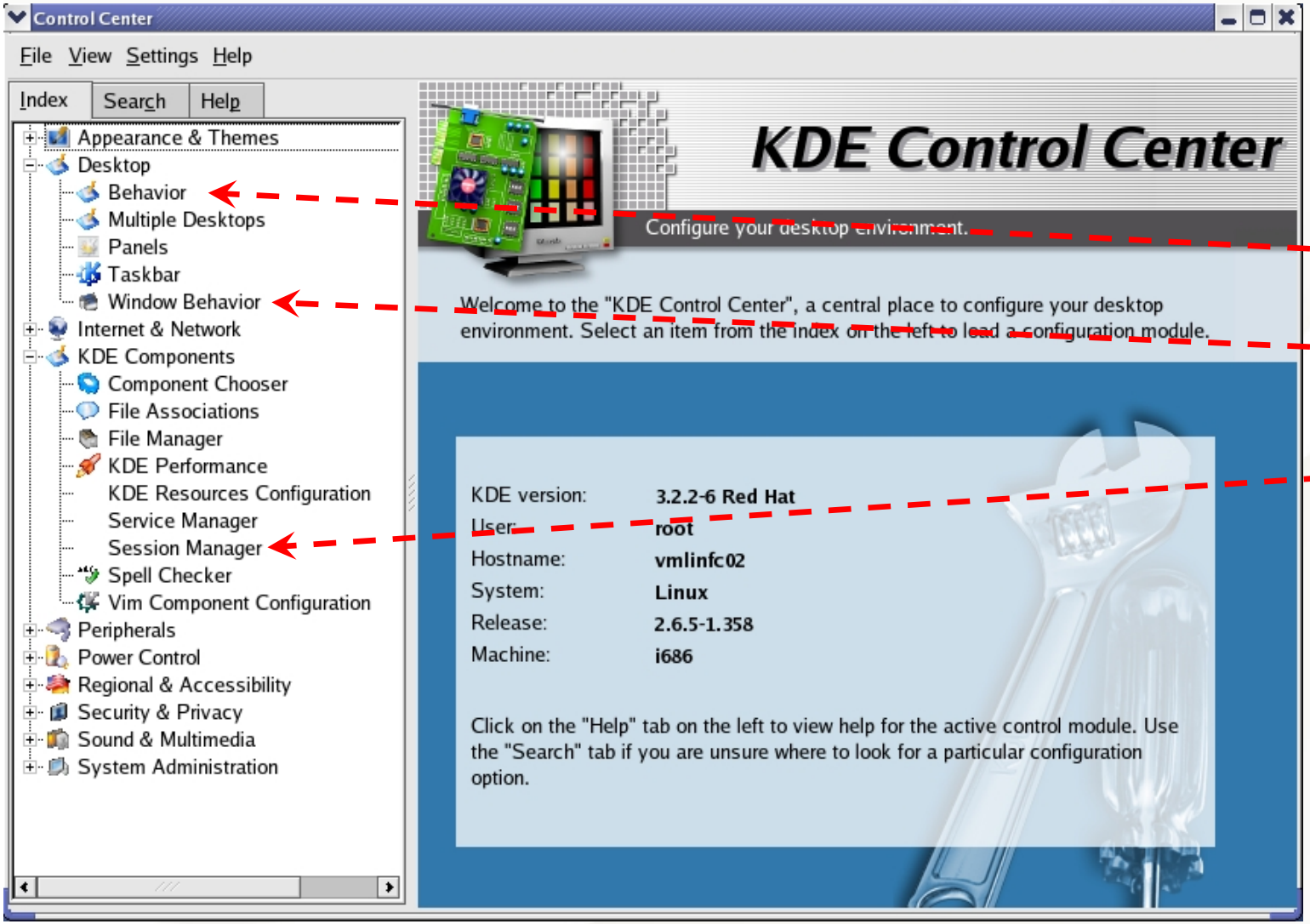
Okay, So Now What?

- **Why, customization, of course!**

- **Both KDE and GNOME have control panels that allow you to customize:**
  - Backgrounds
  - Mouse Behavior
  - Window Focus Behavior
  - Workspaces
  - And a whole lot more …

- **You can add additional panels**
- **You can add launchers to panels**
- **You can go nuts customizing your environment**
- **There are also window manager customizations**
- **Don’t forget to set “save current setup” or to select it when you log out …**

Configuring Basic KDE Desktop Options



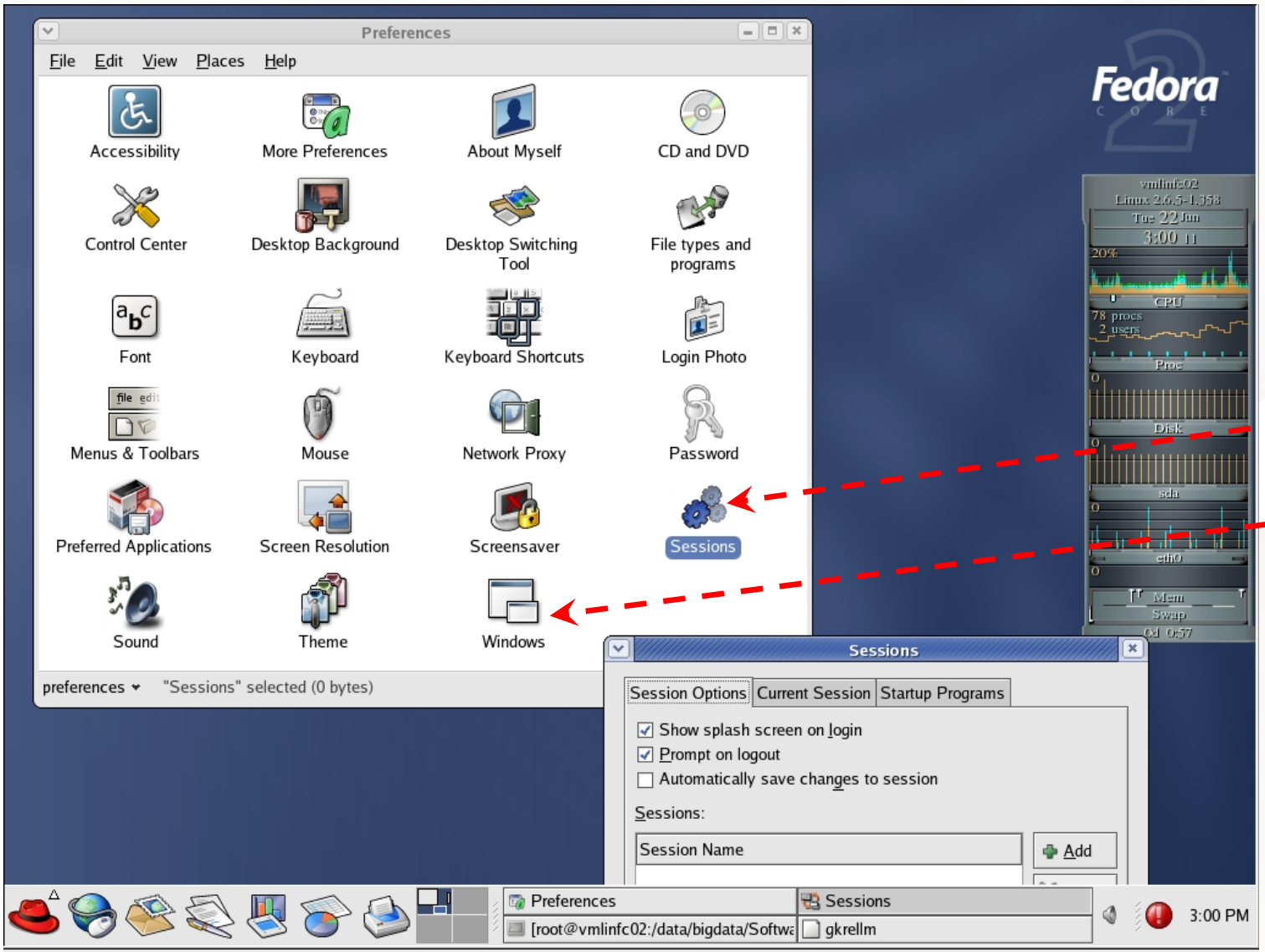
Some default setting that are usually my first stops …

Desktop Behavior

Window Behavior

Session Manager

Configuring Basic GNOME Desktop Options



Some default setting that are usually my first stops …

Desktop Behavior

Session Manager

Window Behavior

Lab 1: Configuring Linux Desktop Settings

See Lab #1 Handout for Instructions

The *gkrellm* Monitoring Tool

The *gkrellm* tool is not loaded by default for some reason (unless you select it explicitly or use the "Everything" option during installation.

Here we see CPU monitoring and network interface traffic, along with current system processes.

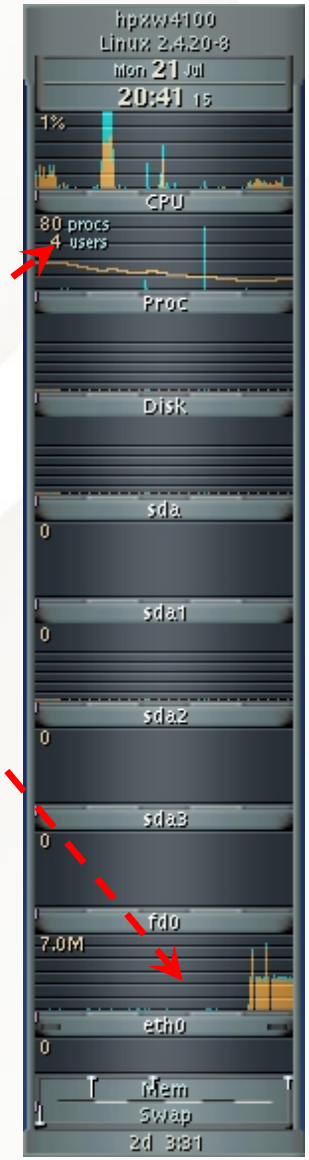
Information and *gkrellm* itself is available from:

http://www.gkrellm.net

Skins (themes) are available from"

http://www.muhri.net

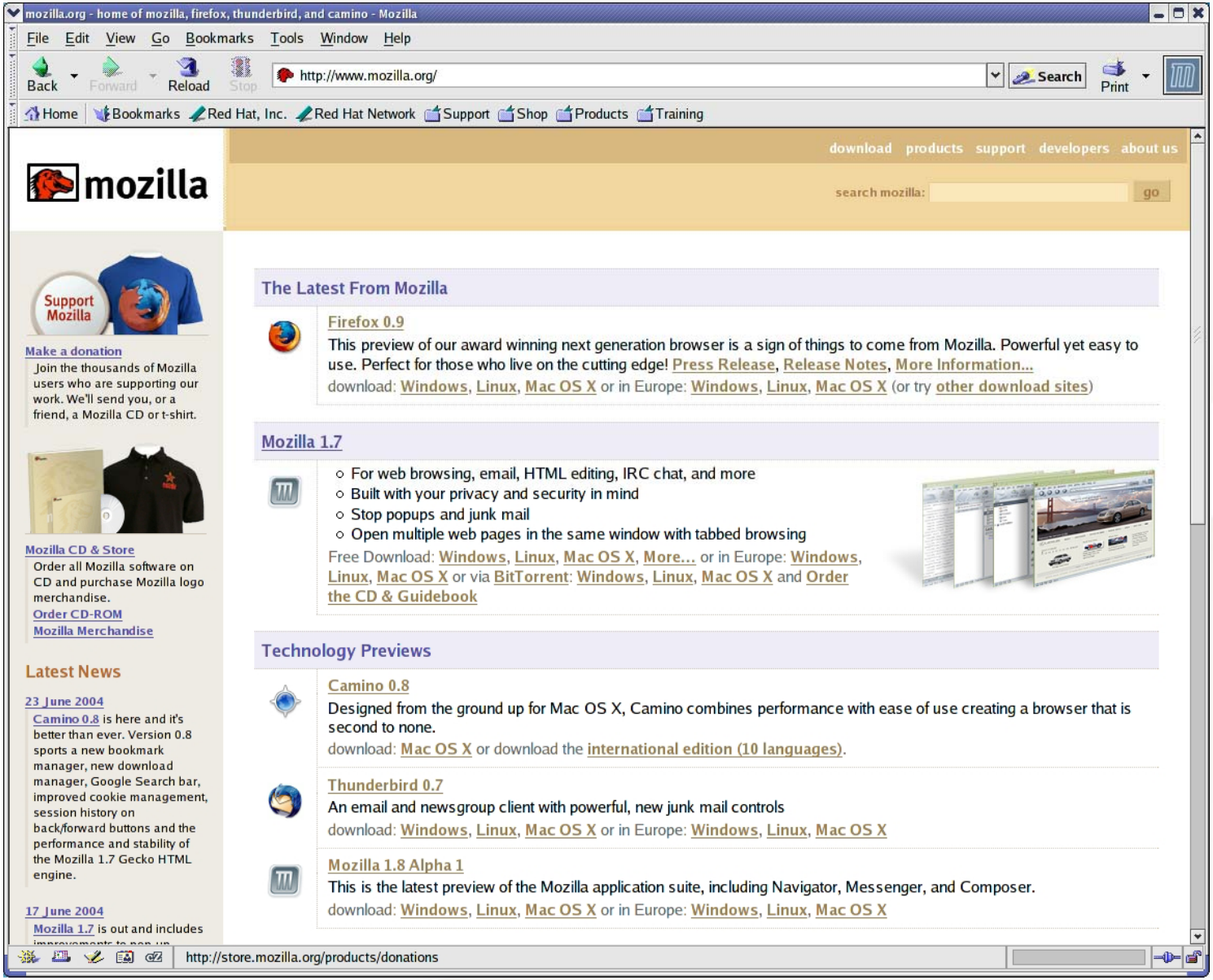
Also can be run in client-server mode to collect and display data from remote systems



Web Browsers Available on Linux

- **There are a *lot* of web browsers and similar web tools available for Linux:**
  - mozilla (open-source released by Netscape)
  - mozilla firefox (open-source next generation of mozilla)
  - netscape (modified Mozilla)
  - lynx (text-based browser)
  - opera (downloadable)
  - galeon (based on Mozilla's gecko)
  - konquerer (KDE browser)
  - wget/curl (command-line URL get)
  - privoxy (privacy proxy filters ads and popups)
- **The *mozilla* browser implements cookie management, pop-up controls, ad filtering, and numerous other privacy features (netscape removes these before releasing their version of the browser)**
- **By the way, the *mozilla* install "lives" in */usr/lib/mozilla-<version>* and the */usr/bin/mozilla* executable is sometimes a script to set up the environment and launch the browser**

The *Mozilla* Browser

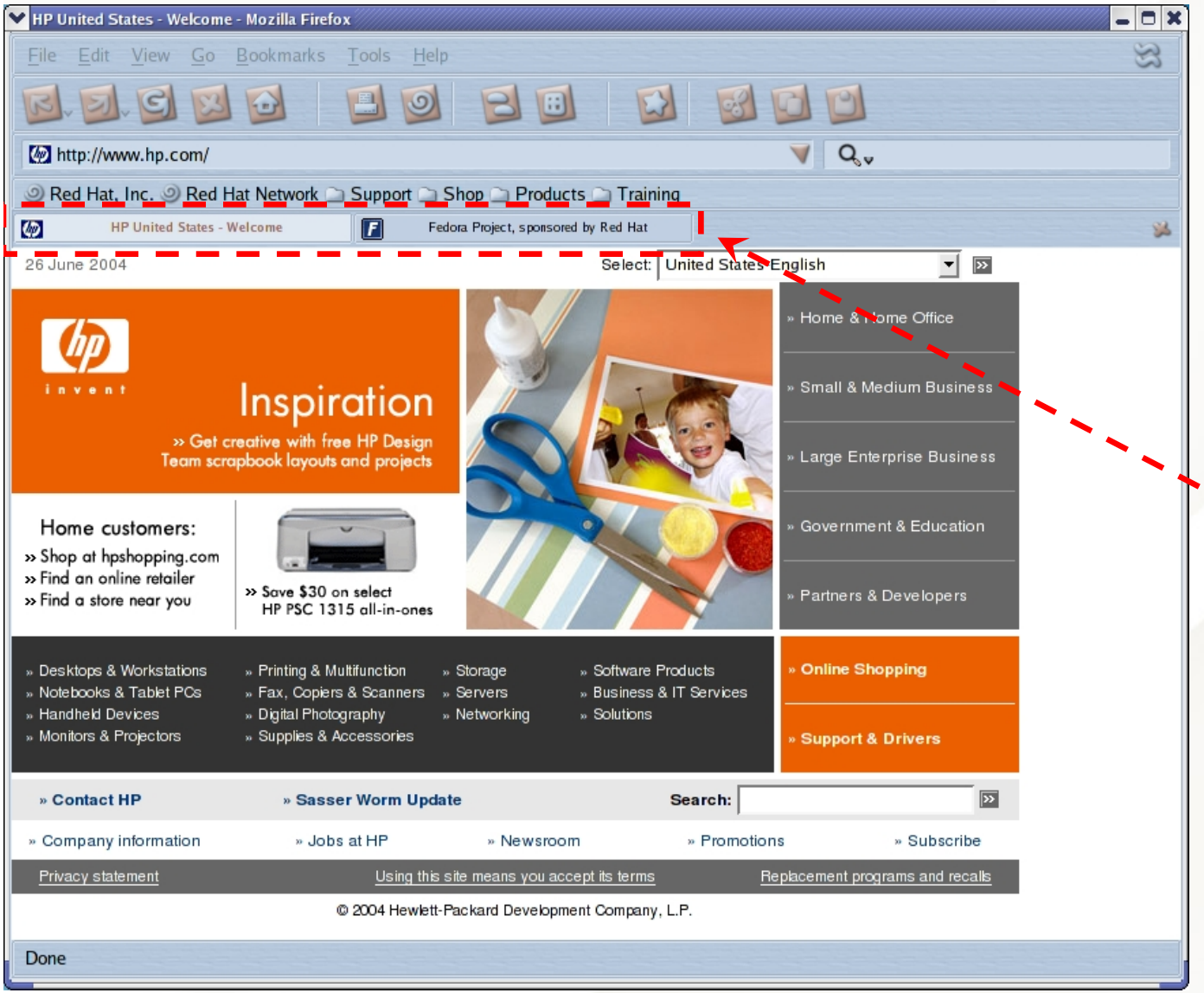


Mozilla can manage:

passwords
form data
popups
cookies
images

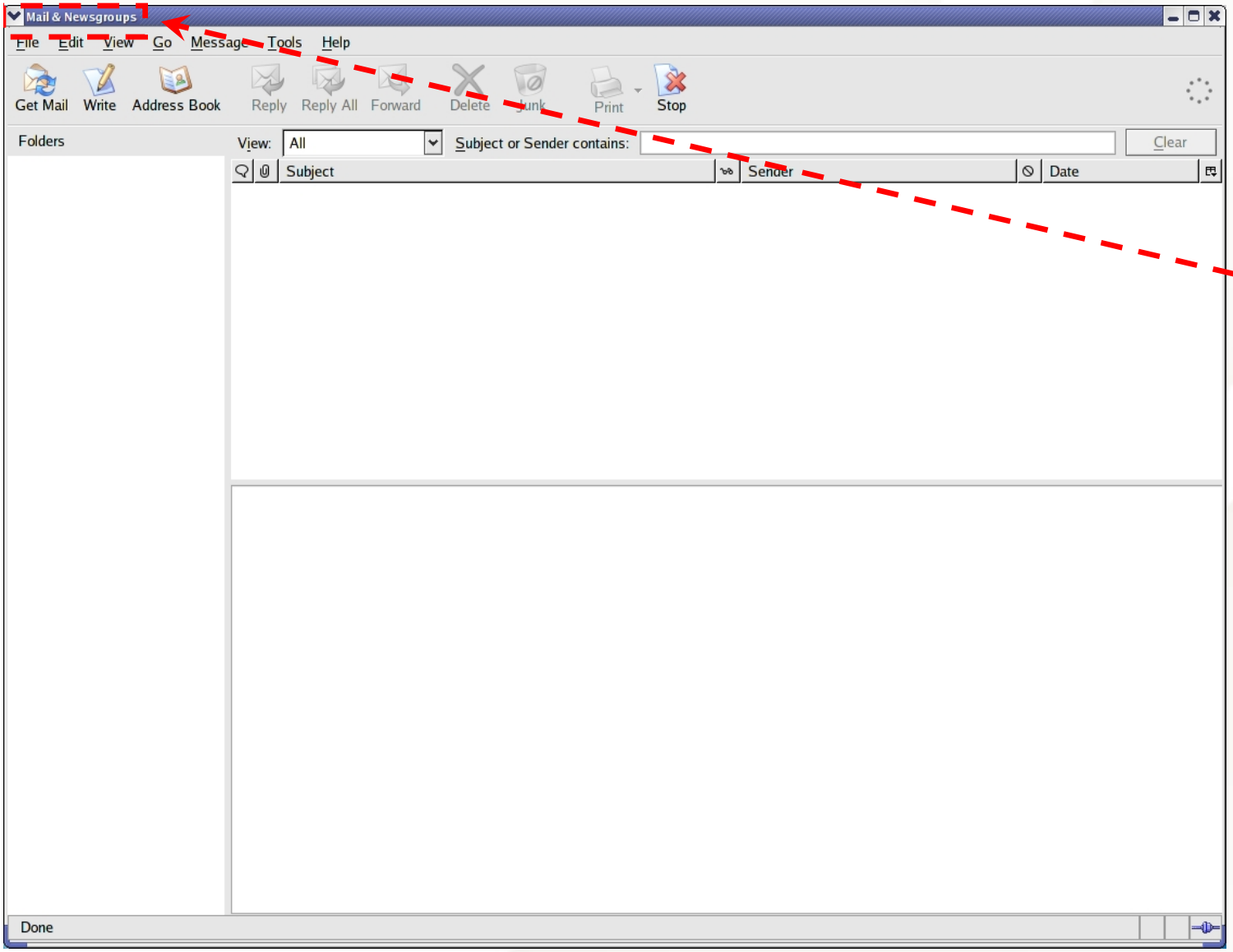
(much more)

The Mozilla *Firefox* Browser



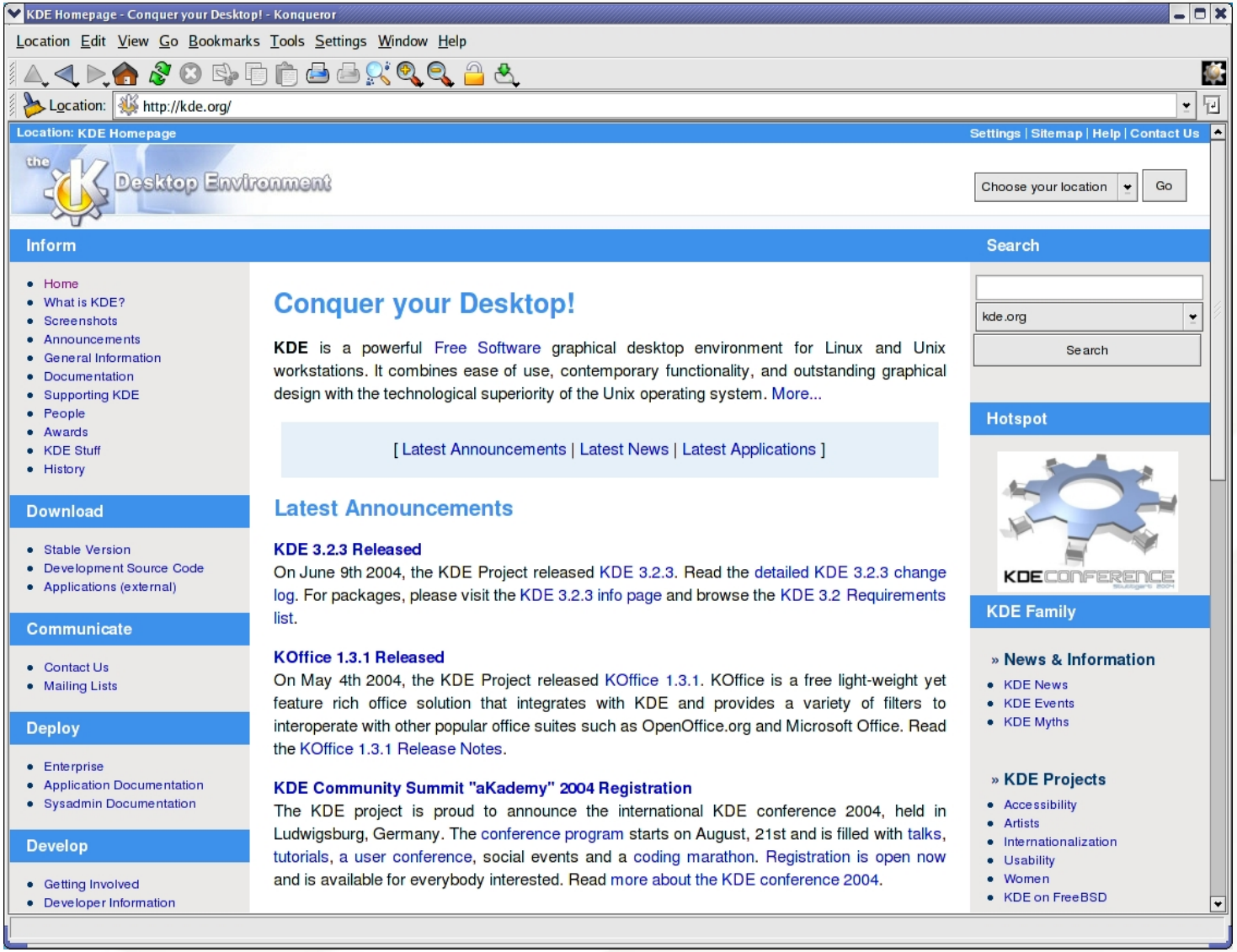
Firefox is the next generation browser from the folks that brought us Mozilla. It has advanced features like “tabbed” browsing, themes, and extensions.

Mozilla *Thunderbird* E-mail Client



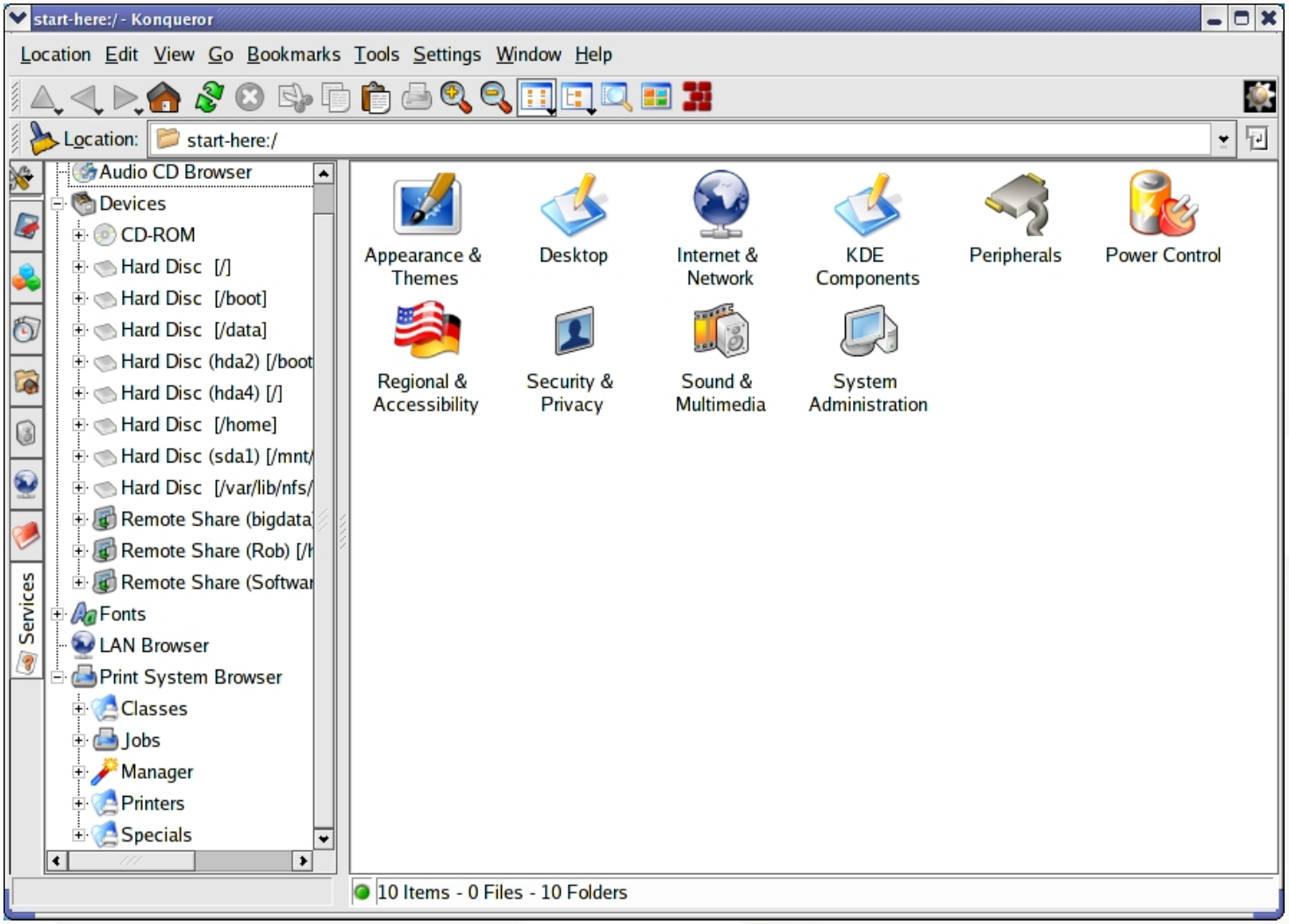
Thunderbird is the next generation e-mail and news reader client from the folks that brought us Mozilla. It has advanced features like spam filtering, and multiple account management

The KDE *Konqueror* Browser



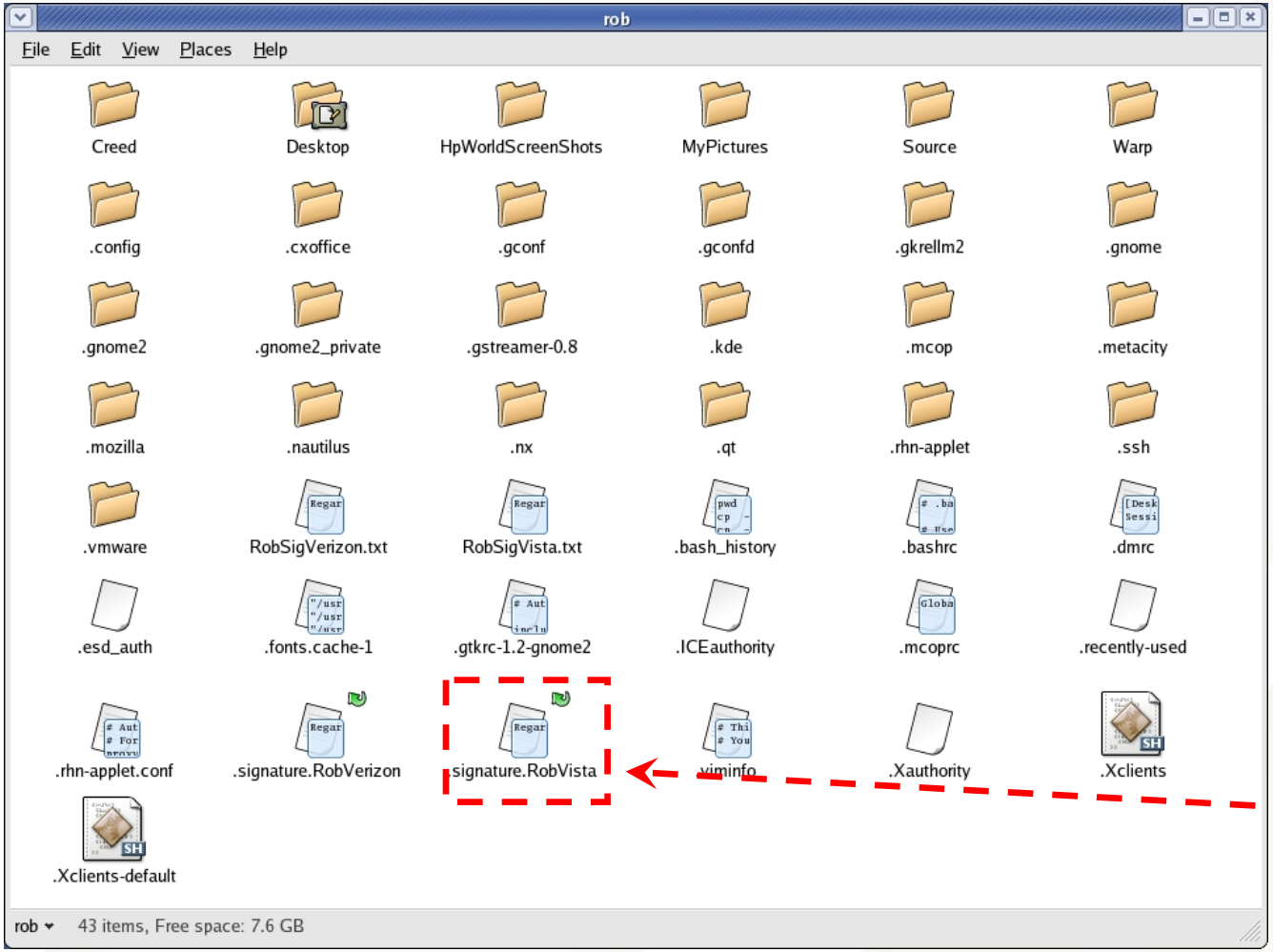
The *konqueror* is the integrated browser for KDE (the K Desktop Environment).

KDE *"Start Here"* Icon Uses *konqueror*



The *konqueror* browser is used in KDE to browse *everything*! Clicking on the KDE "*Start Here*" icon on the desktop opens this window. Notice devices, services, LAN, and, …

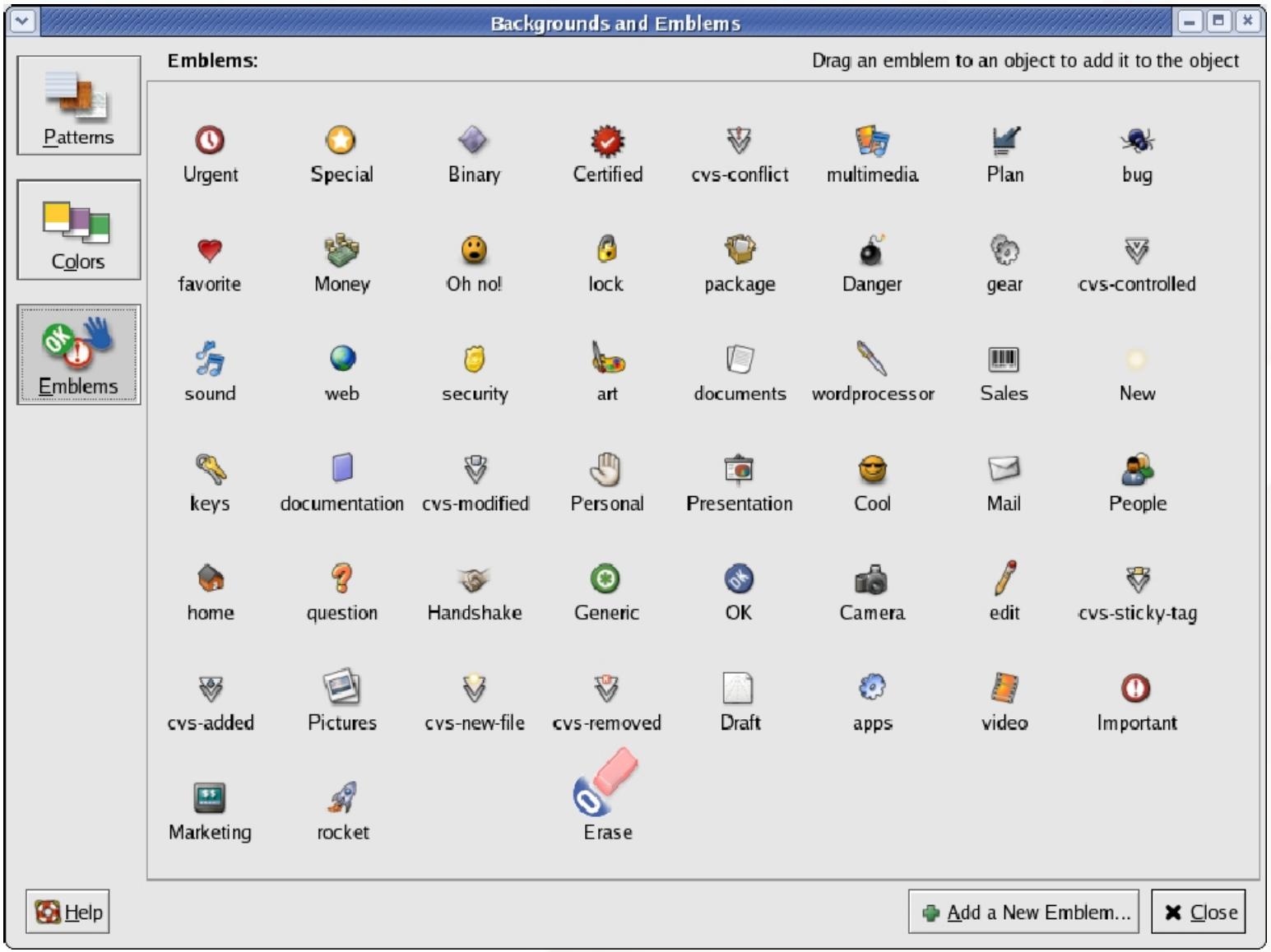
The GNOME *nautilus* File Browser



The nautilus file browser is used to show your home directory, the "Start Here" information, and other information, like preferences. This is a lot like the Windows Explorer behavior.

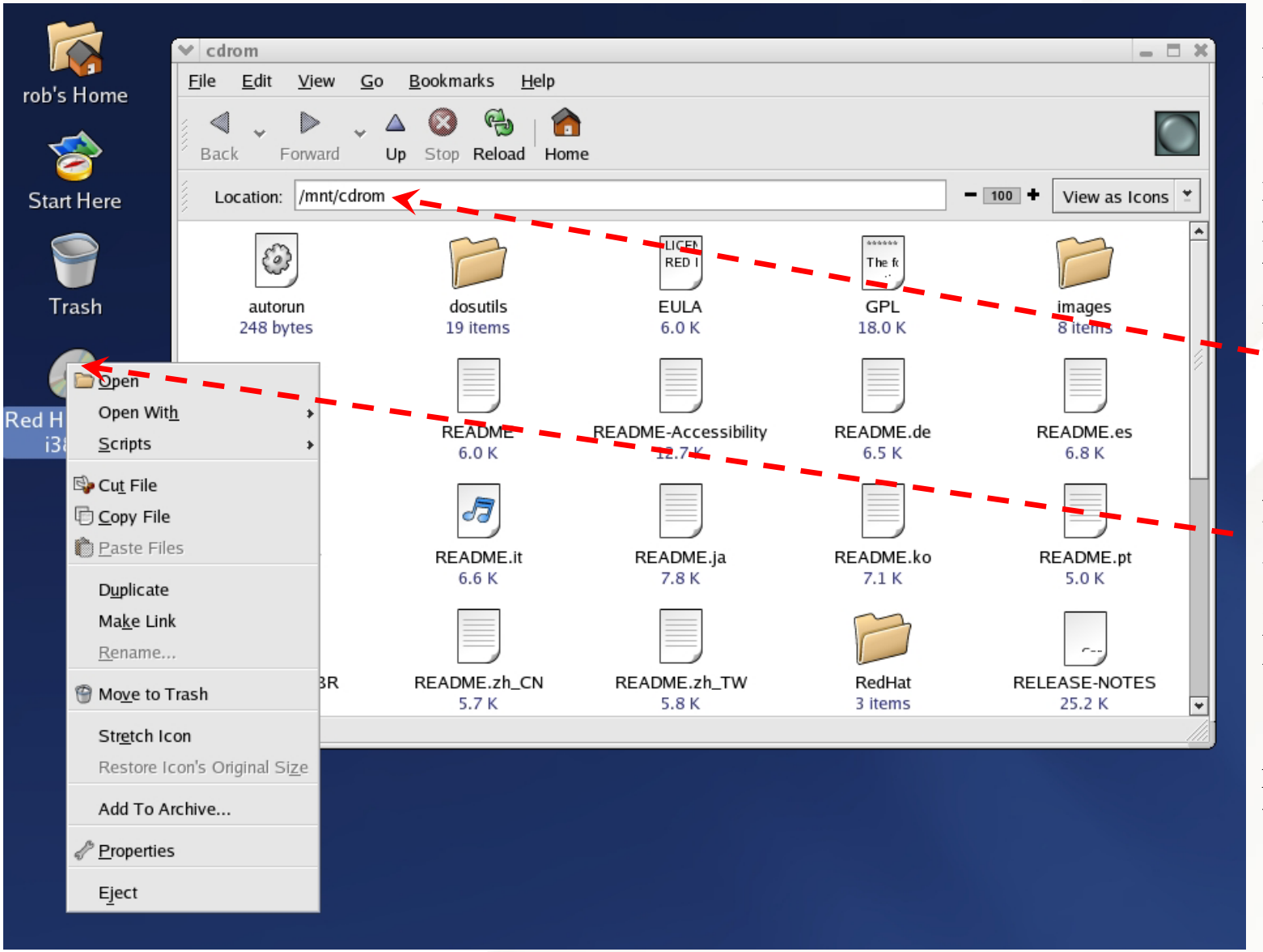
The icons describe the file type, may show the file contents, and have "emblems" that describe attributes like "executable".

The *nautilus* File Browser's "Emblems"



Emblems are affixed to *nautilus* file icons to convey extra information about the file's status.

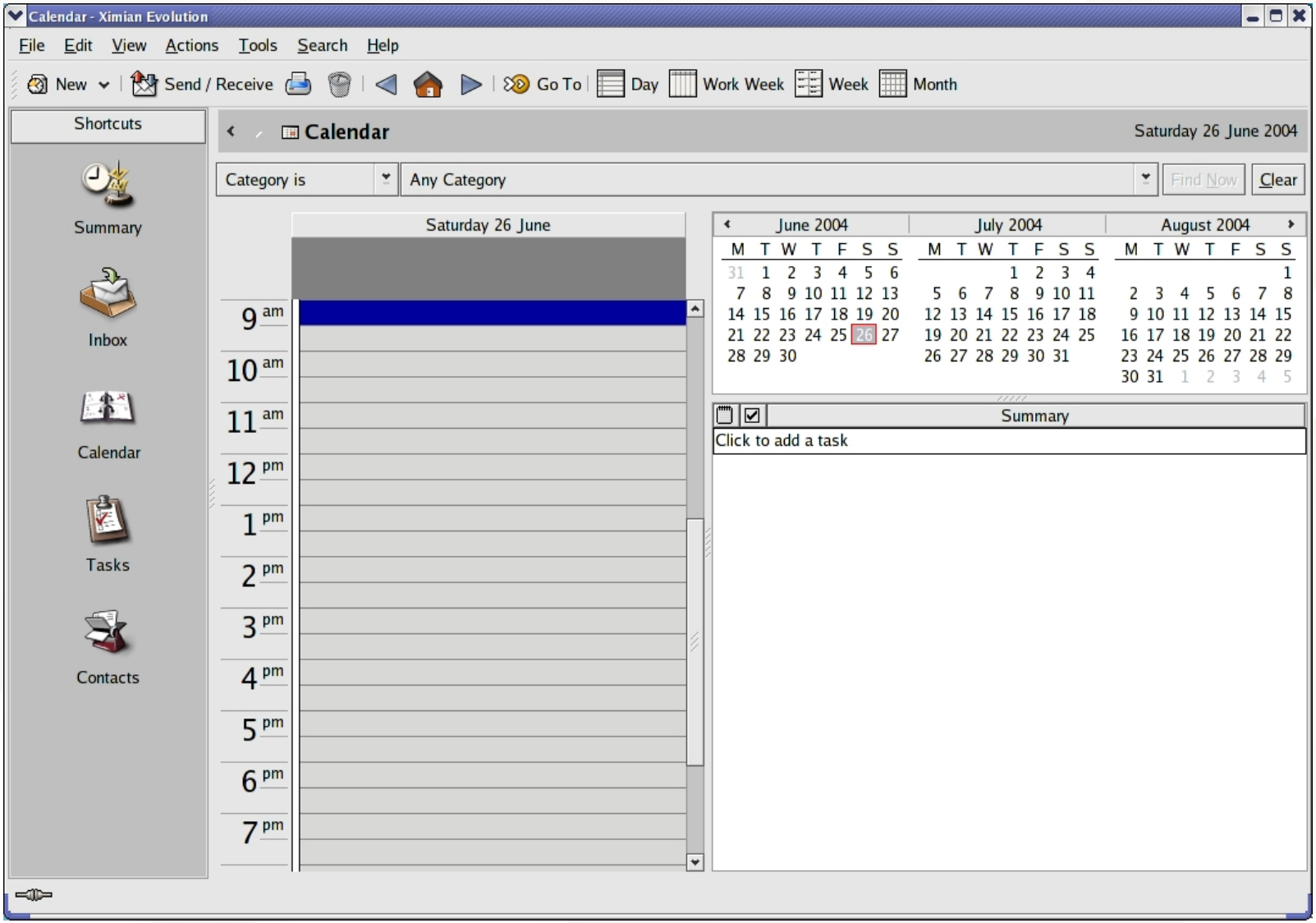
Inserting an ISO CD-ROM with GNOME and *nautilus*



Inserting a CD-ROM will open *nautilus* if it is an ISO file system, or the CD player if it is an audio CD.

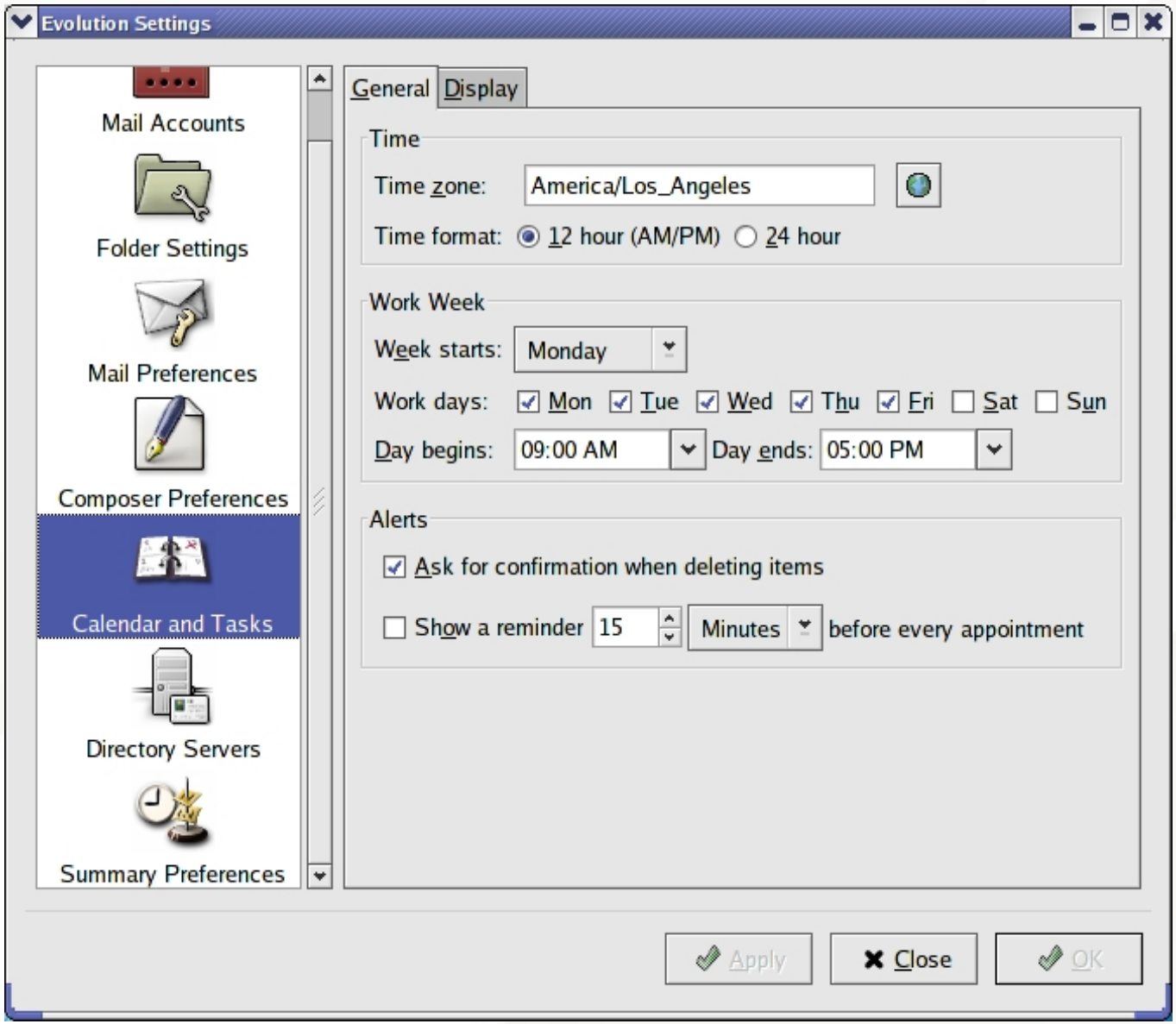
A desktop icon will appear when *nautilus* opens the CD-ROM, and options are available by right-clicking the CD icon

The Ximian (Novell) *evolution* Organizer



The Ximian company was purchased by Novell. The *evolution* product should look a little familiar.

The *evolution* Settings Window

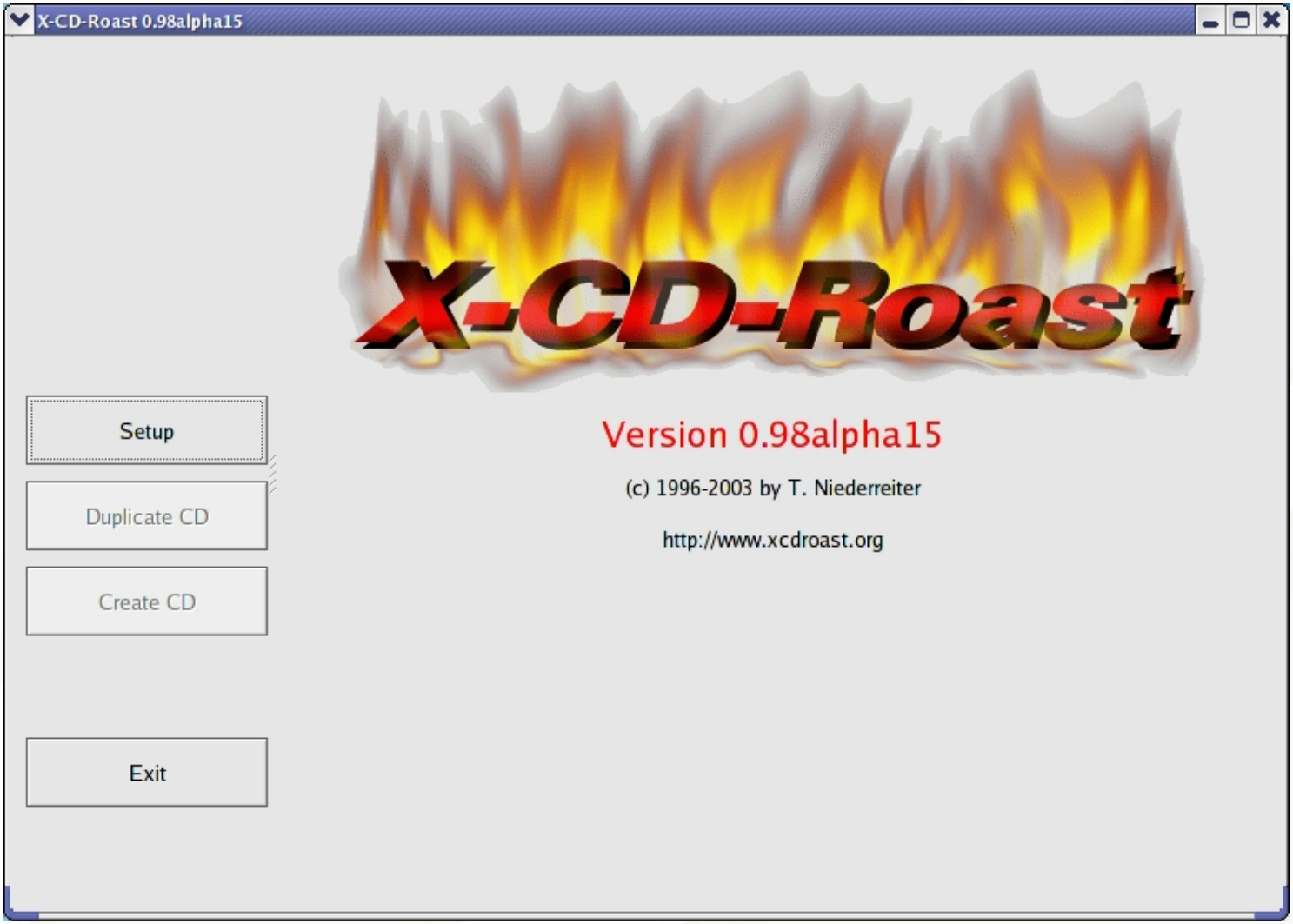


The *evolution* organizer is a full-fledged calendaring, e-mail, and contacts tool. It can interface with a variety of e-mail transports, including Microsoft Exchange servers (extra cost option).

CD Burning Software, *xcdroast*

The *xcdroast* tool is an interface to other system software, like *mkisofs* and *cdrecord*. It allows non-root users to create CD-ROMs only if it has been configured to do so. If you do not want to "open up" the access, then only *root* will be able to burn CDs.

The *xcdroast* Main Menu

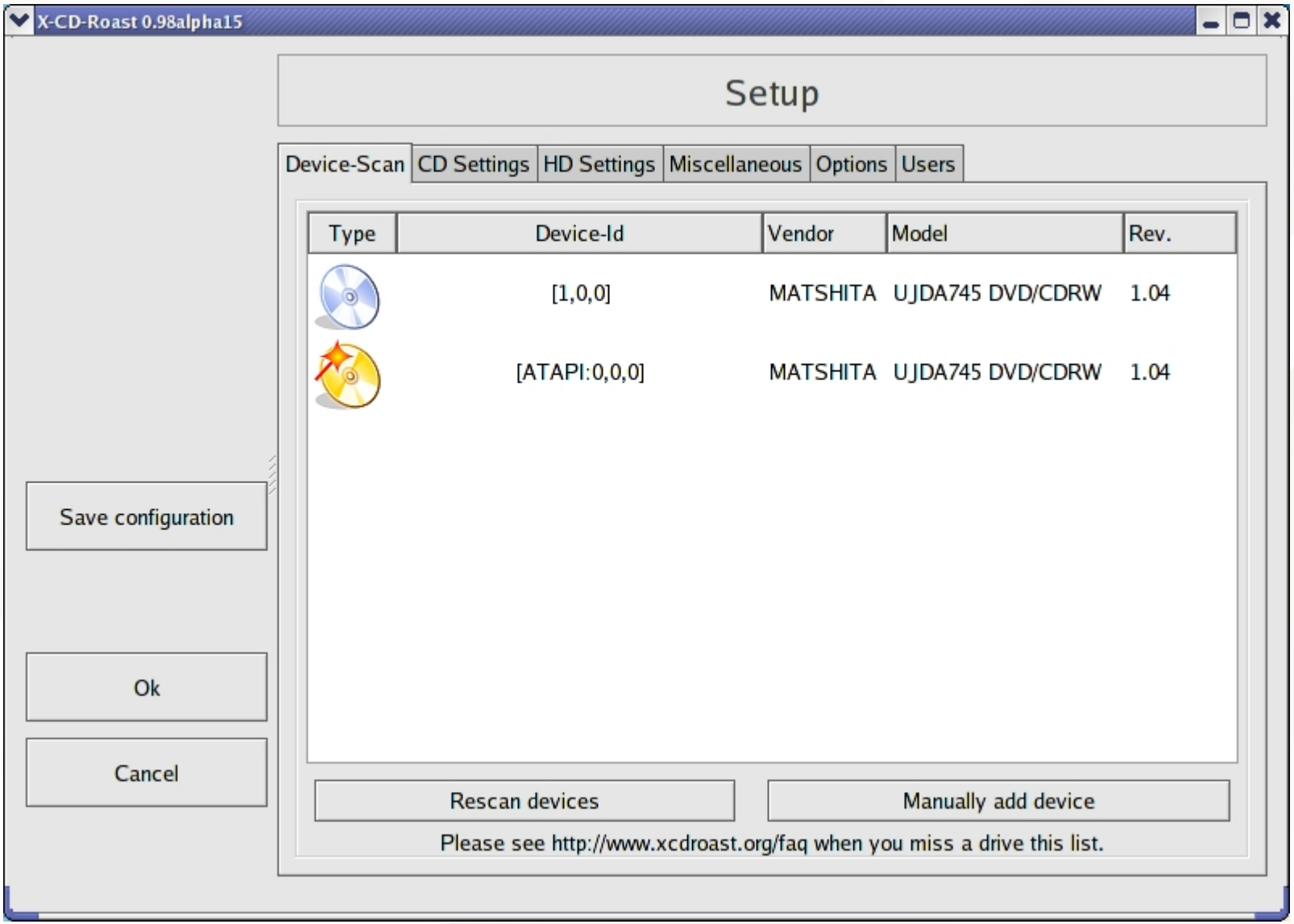


Pretty simple. Notice that his software has still not reached its “major release” point (version 1.0). This does not make it any less useful.

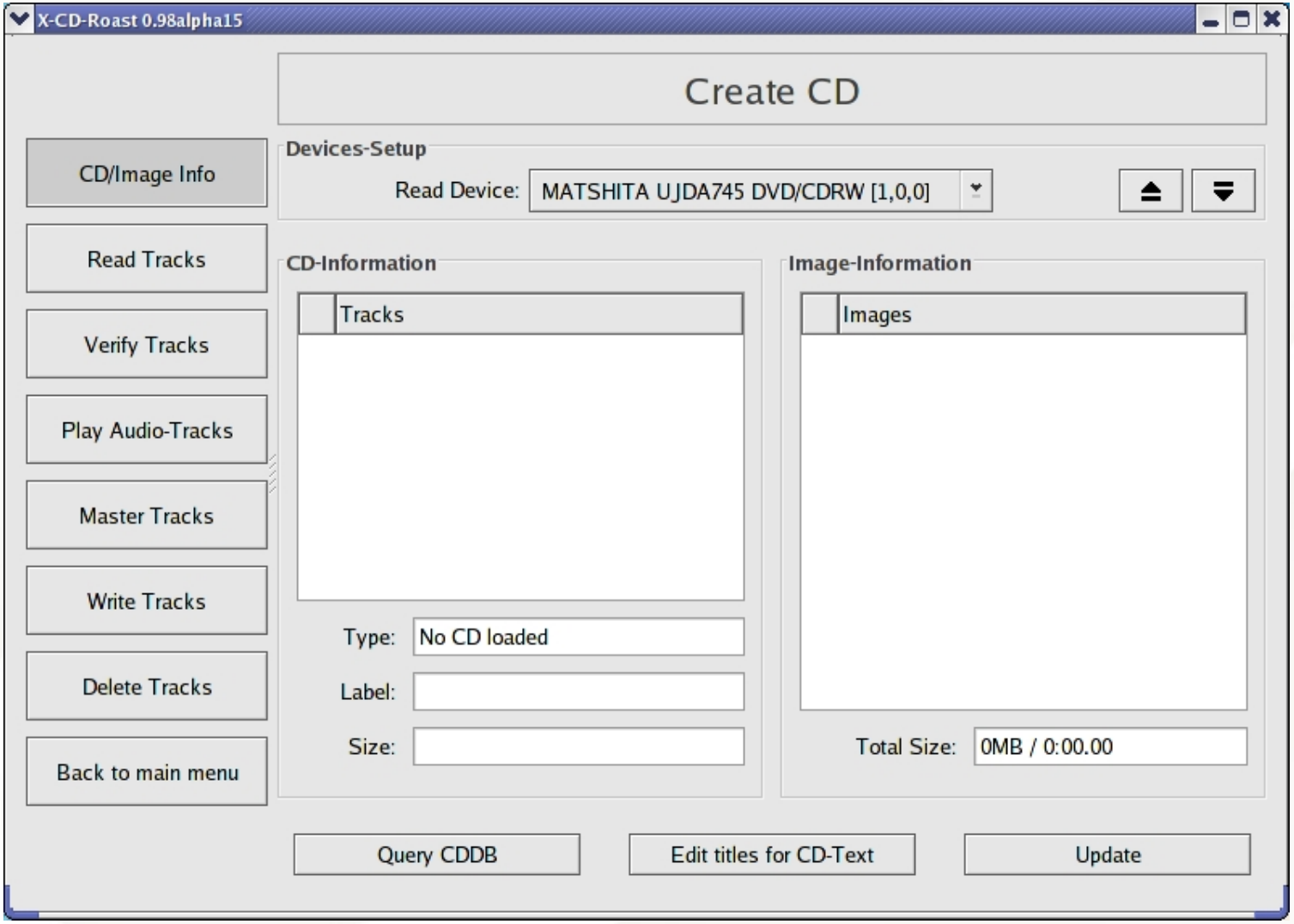
Lab #2: Useful Linux Graphical Tools

See Lab #2 Handout for details

Choosing a CD Writer for *xcdroast*

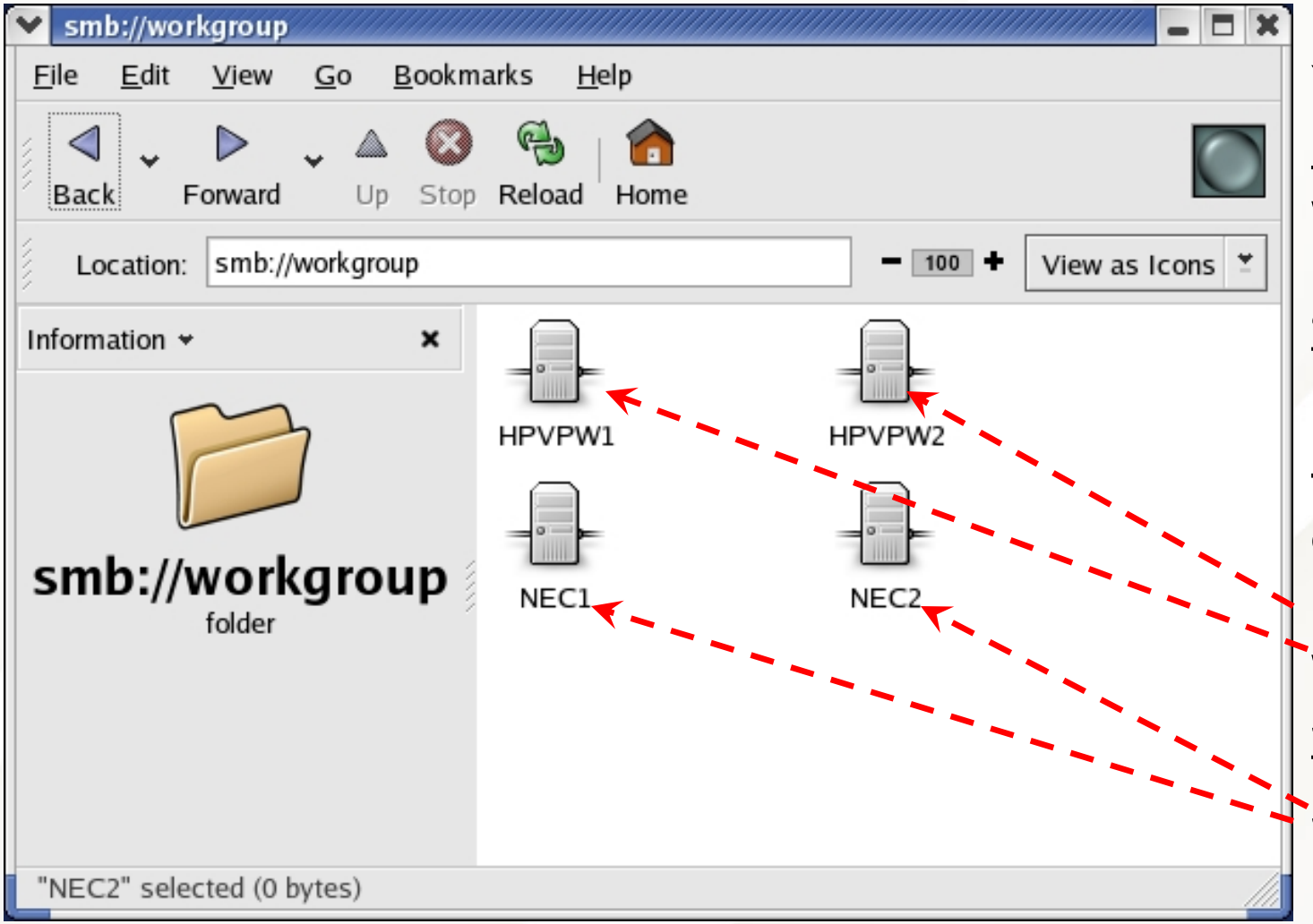


Creating a CD with *xcdroast* …



Once the tool is setup and pointed to the proper device, you can burn ISO images or music CDs.

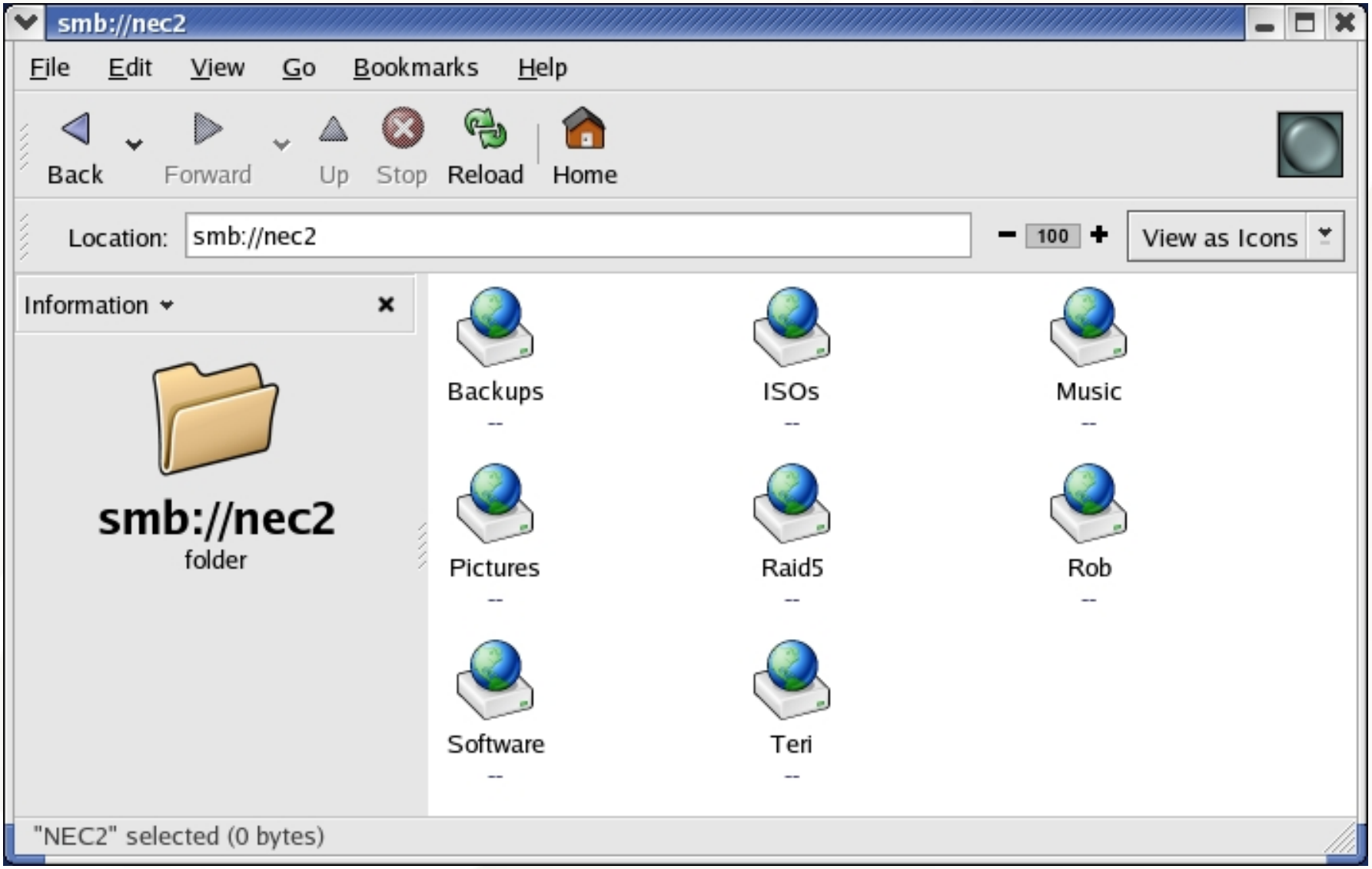
Mounting SMB Shares



You can mount SMB shares from Windows® or Samba servers and access them through *nautilus.*

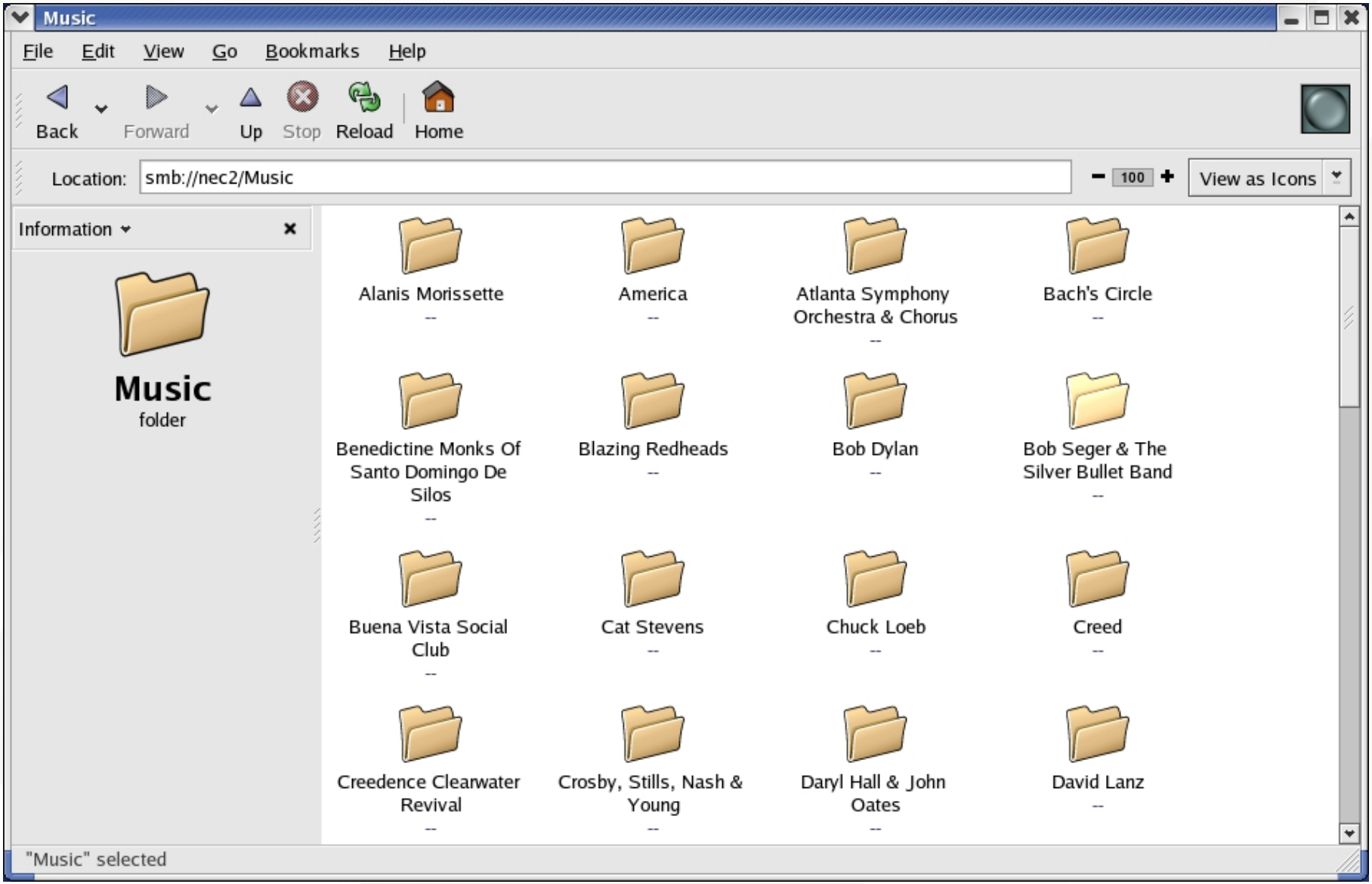
This is a map of the systems in my home network: two Windows systems and two Samba servers.

Viewing Individual Samba Shares



Music Share After Authentication

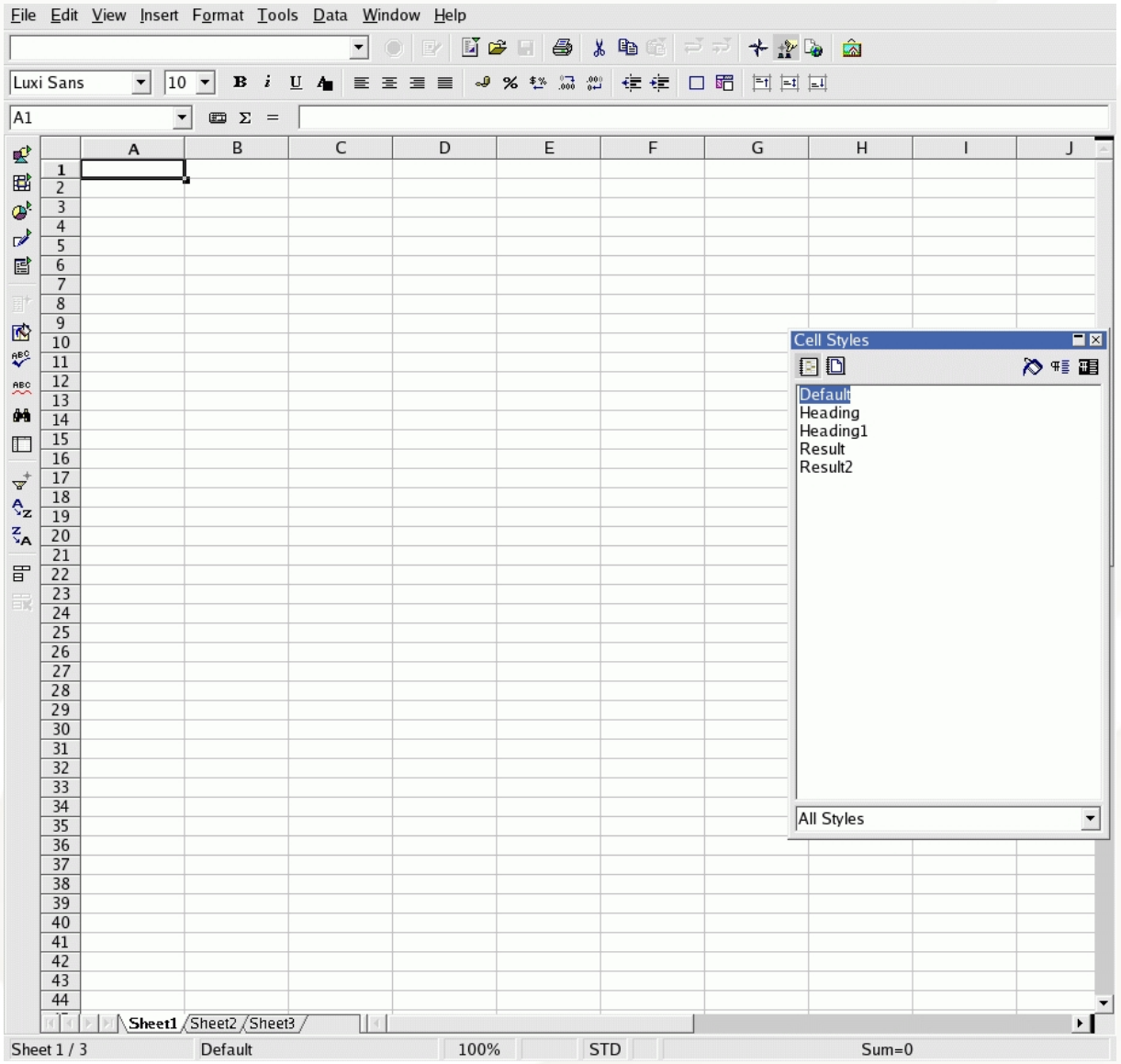
(Dear RIAA: Yes, I have purchased all of the music present here and do not share)



OpenOffice Tools

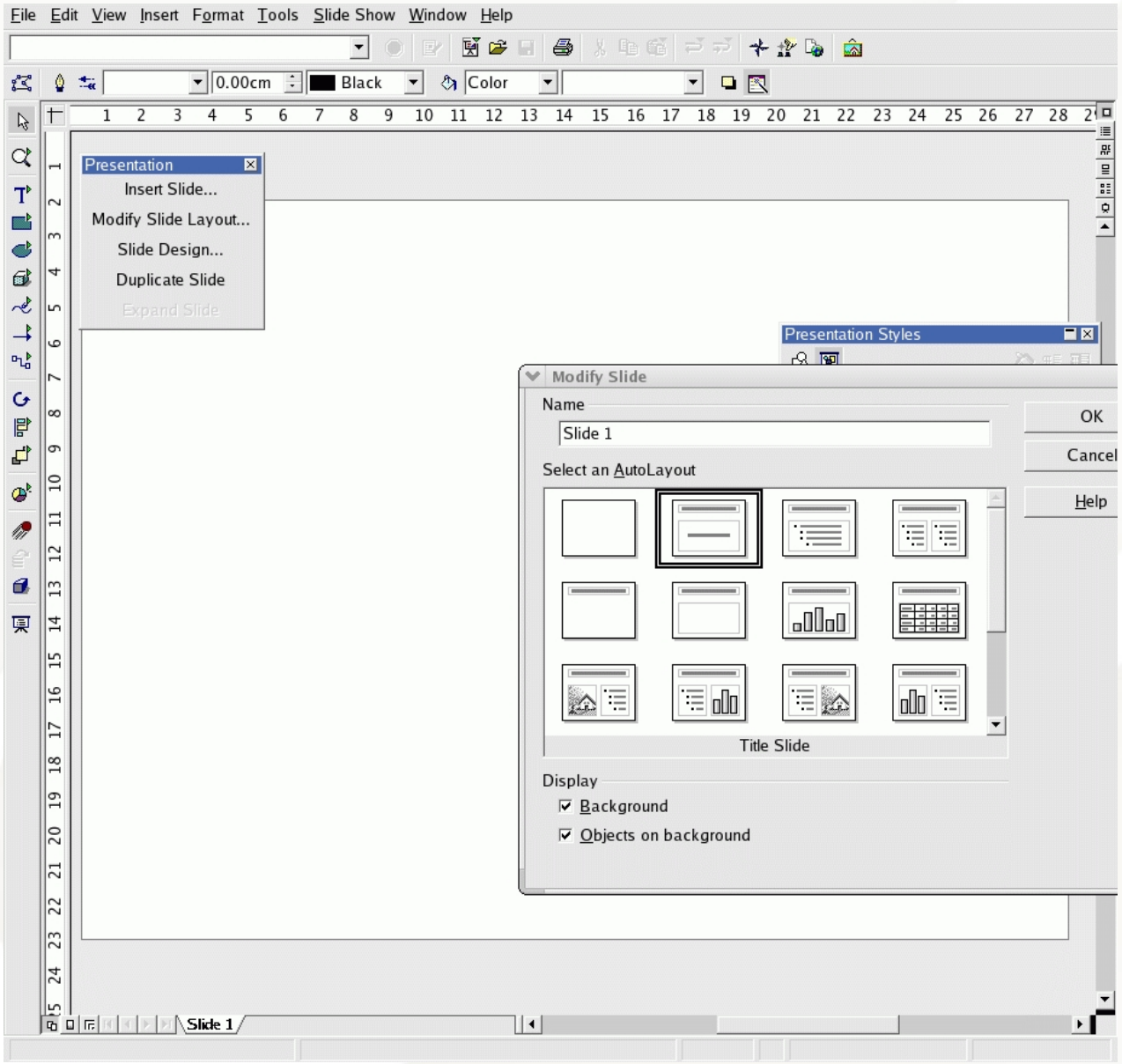
- **The OpenOffice tools are an open-source version of the Sun StarOffice Suite**
  - Current version is 1.1.2
- **The StarOffice tools are available for $$ from Sun**
- **The OpenOffice tools are available from http://OpenOffice.org**

OpenOffice Calc Spreadsheet



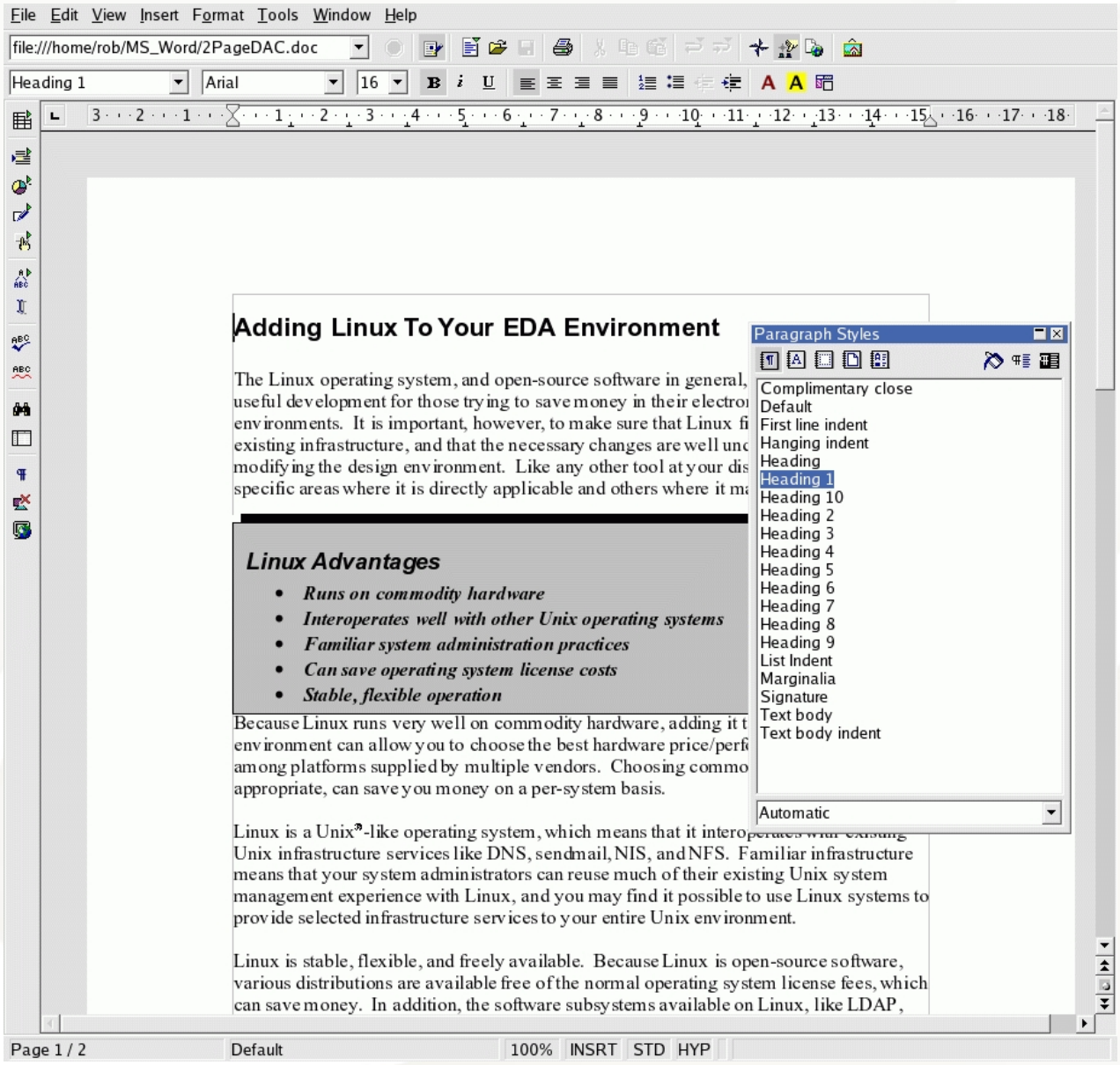
OpenOffice "*Calc*" runs natively on Linux, and can import and export files to Microsoft® Excel®

OpenOffice Impress



OpenOffice "*Impress*" is a presentation tool that can import and export Microsoft® Powerpoint® presentations

OpenOffice Writer



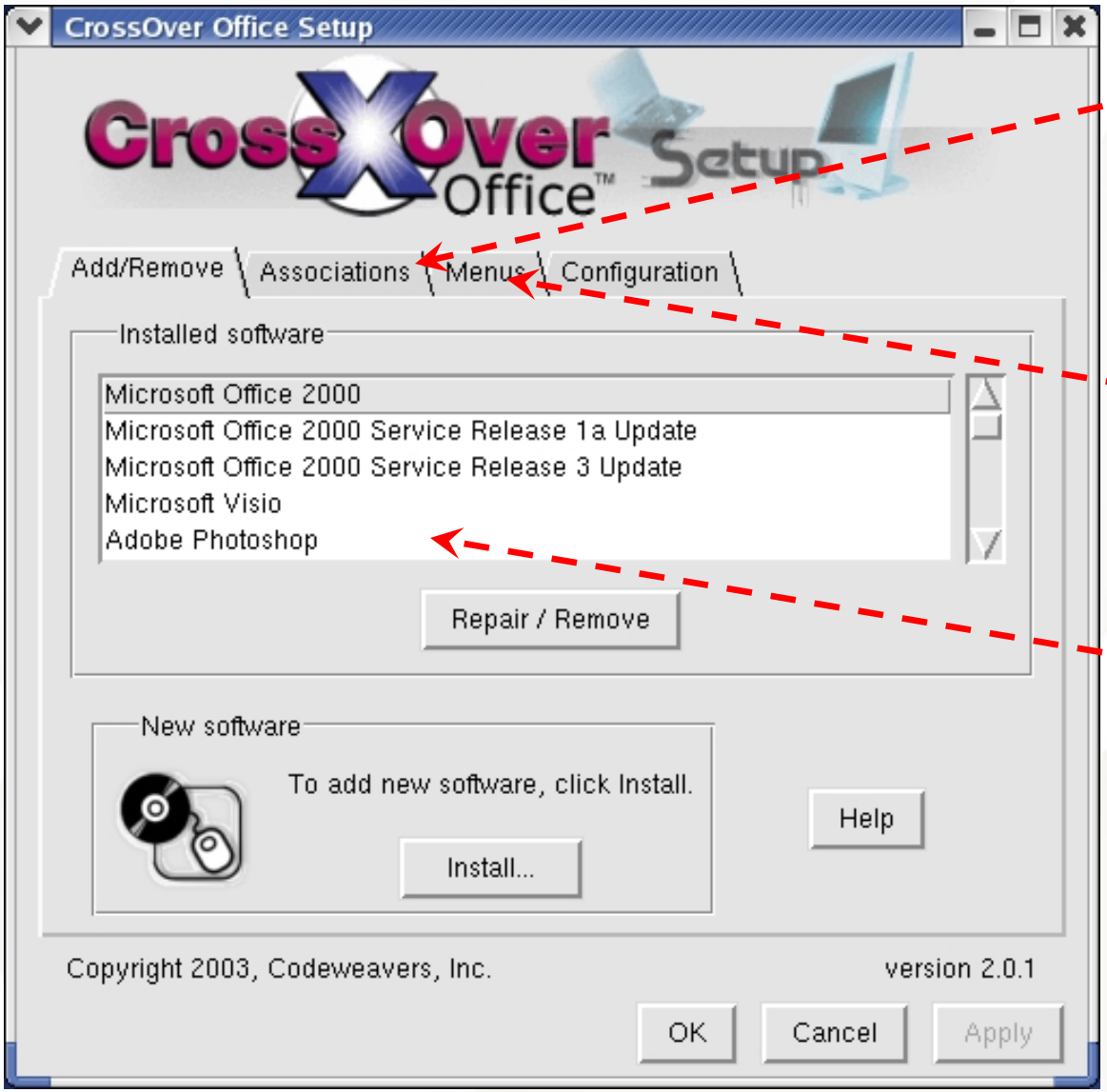
OpenOffice "*Writer*" is a word-processor that can import and write Microsoft® Word® documents.

Crossover Office

- **Crossover Office®, from CodeWeavers Inc. is a special version of WINE (Wine Is Not an Emulator) that can execute Microsoft® Office programs on the Linux Desktop**
- **Available for $$ (reasonably priced) from http://Www.CodeWeavers.Com**
- **You are required to purchase licenses for the Microsoft software, and then install it in the CrossOver Office environment**
- **The CrossOver Office environment integrates itself into your application menu and provides a pseudo-Windows disk arrangement**
- **The tools run quite well as long as you use supported versions of the Microsoft Office product: Office 98, Office 2000, and parts of Office XP**
- **There is no compatibility issues with the application behavior, because is *is* the same software**

CrossOver Office™

CrossOver Office Setup

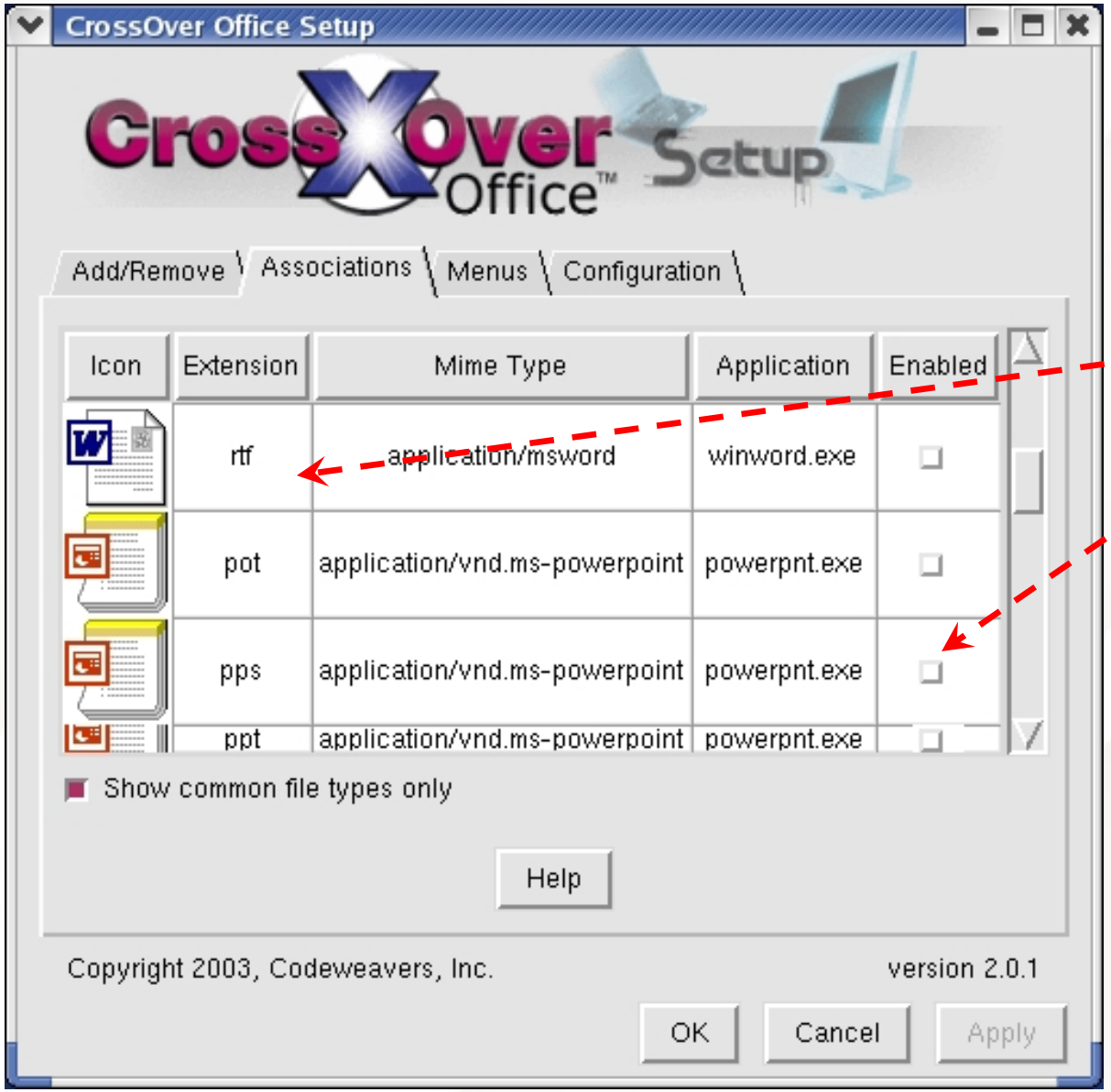


You can create file-type associations and MIME types that start the applications for e-mail attachments

You can choose which tools are integrated into the Linux desktop menus

Some of the supported tools are listed in the "Installed Software" window

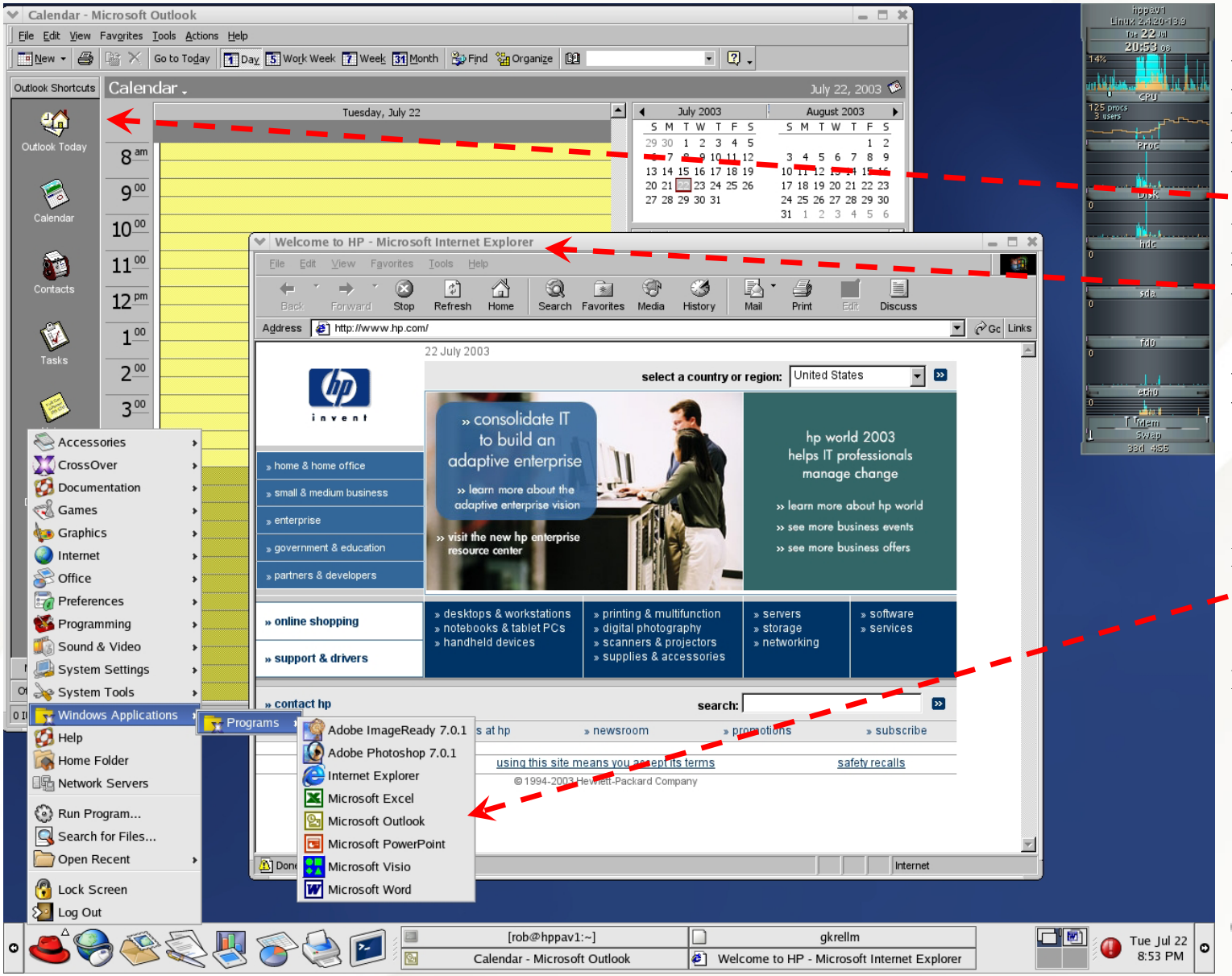
CrossOver Office File Associations



Creating file type associations in the MIME database allows automatically starting the proper tool in response to clicking on an e-mail attachment

The associations are disabled by default

Example Desktop with Outlook and Internet Explorer 6

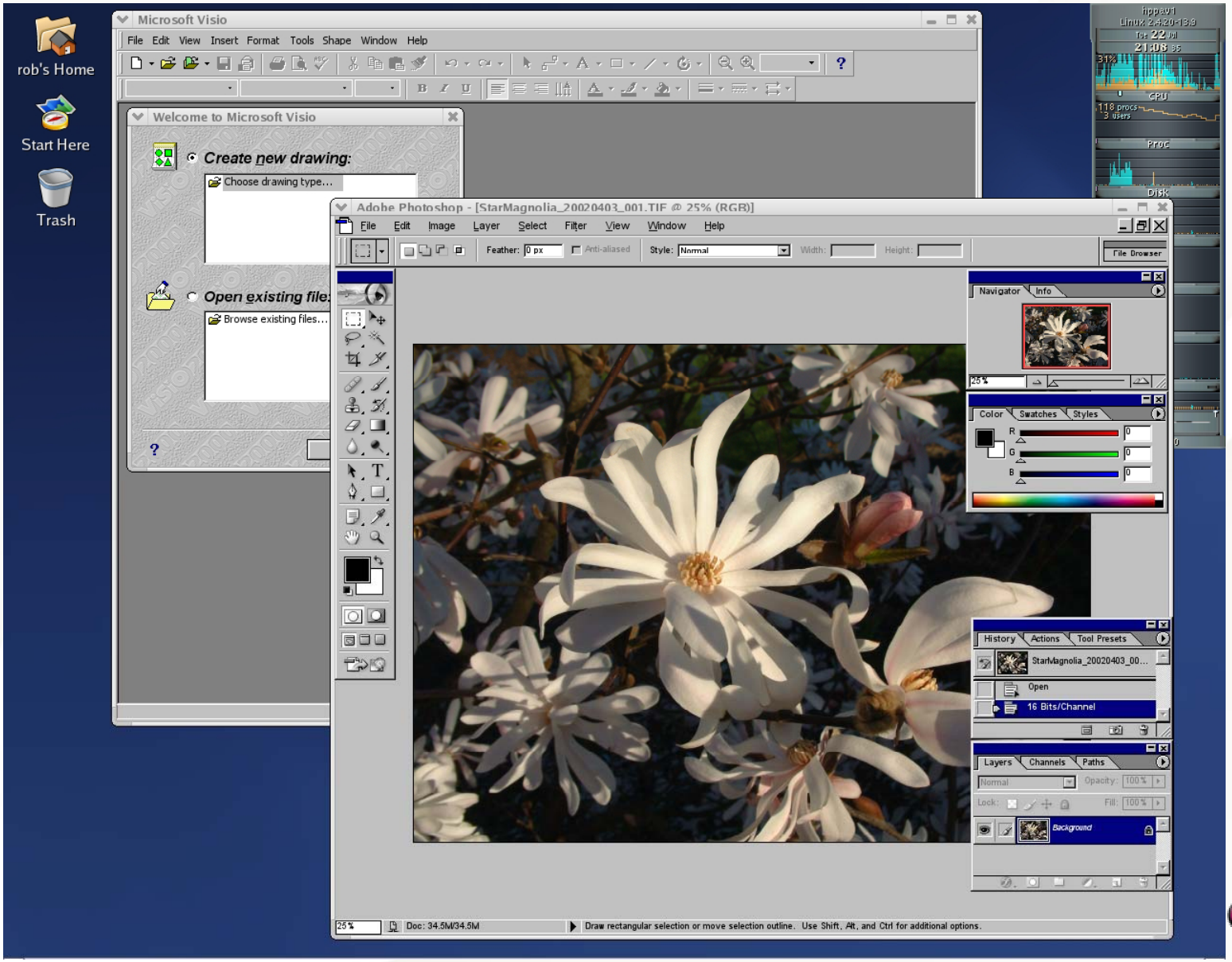


Linux desktop running Microsoft Outlook ® and Internet Explorer®

Microsoft Office applications are integrated into the KDE or GNOME application menus

CrossOver Office

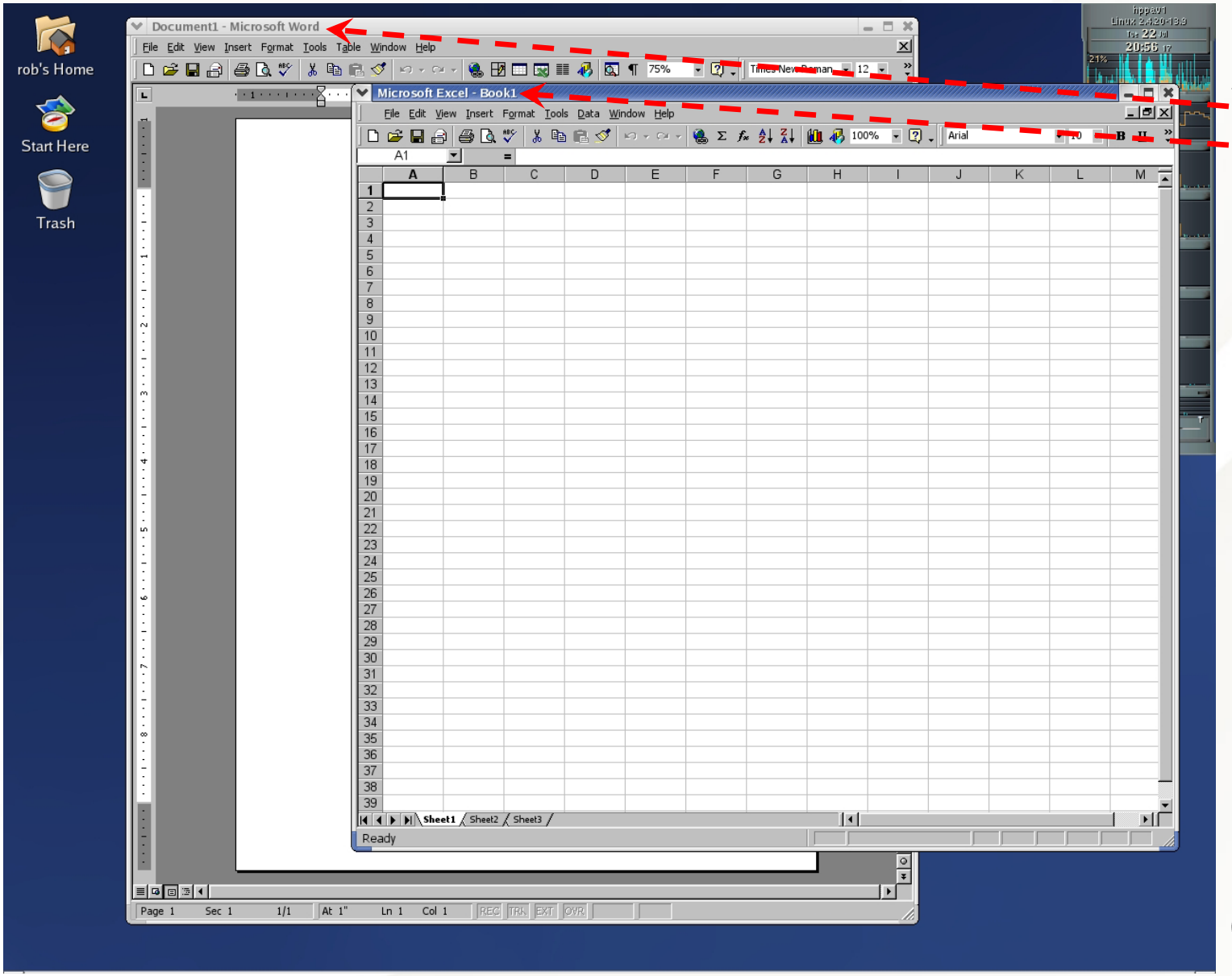
Example Desktop Running ViSiO and Adobe Photoshop



Microsoft Visio® and Adobe Photoshop® 7 are also supported applications in CrossOver Office

CrossOver Office™

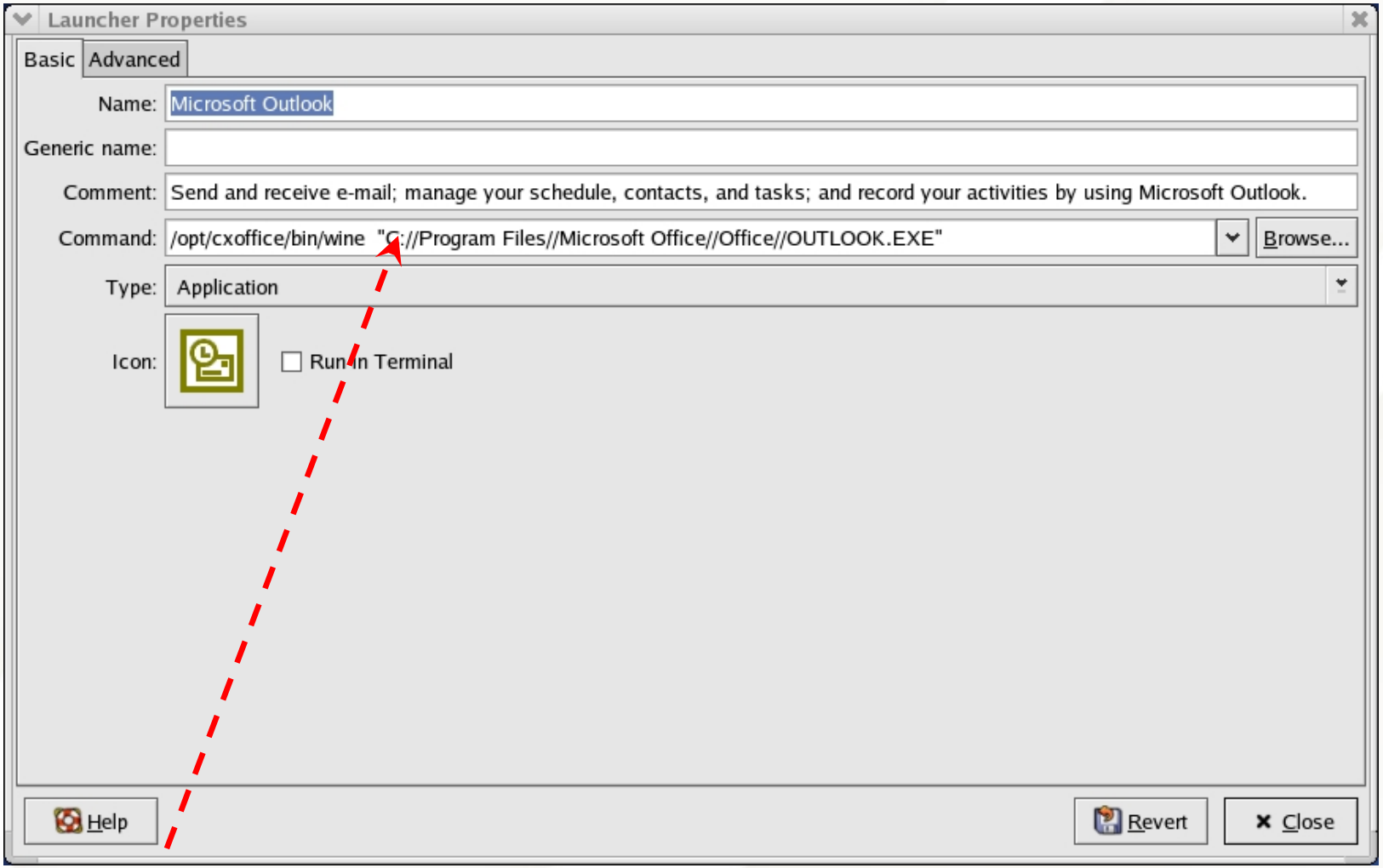
Example Desktop with Microsoft Word and Excel



Microsoft Word and Excel are also supported tools

CrossOver Office

An Example Launcher for CrossOver Office



An example launcher for Outlook

Note the path that is passed to *wine*. It is relative to the *.cxoffice/dotwine/fake_windows* directory in the user's home directory

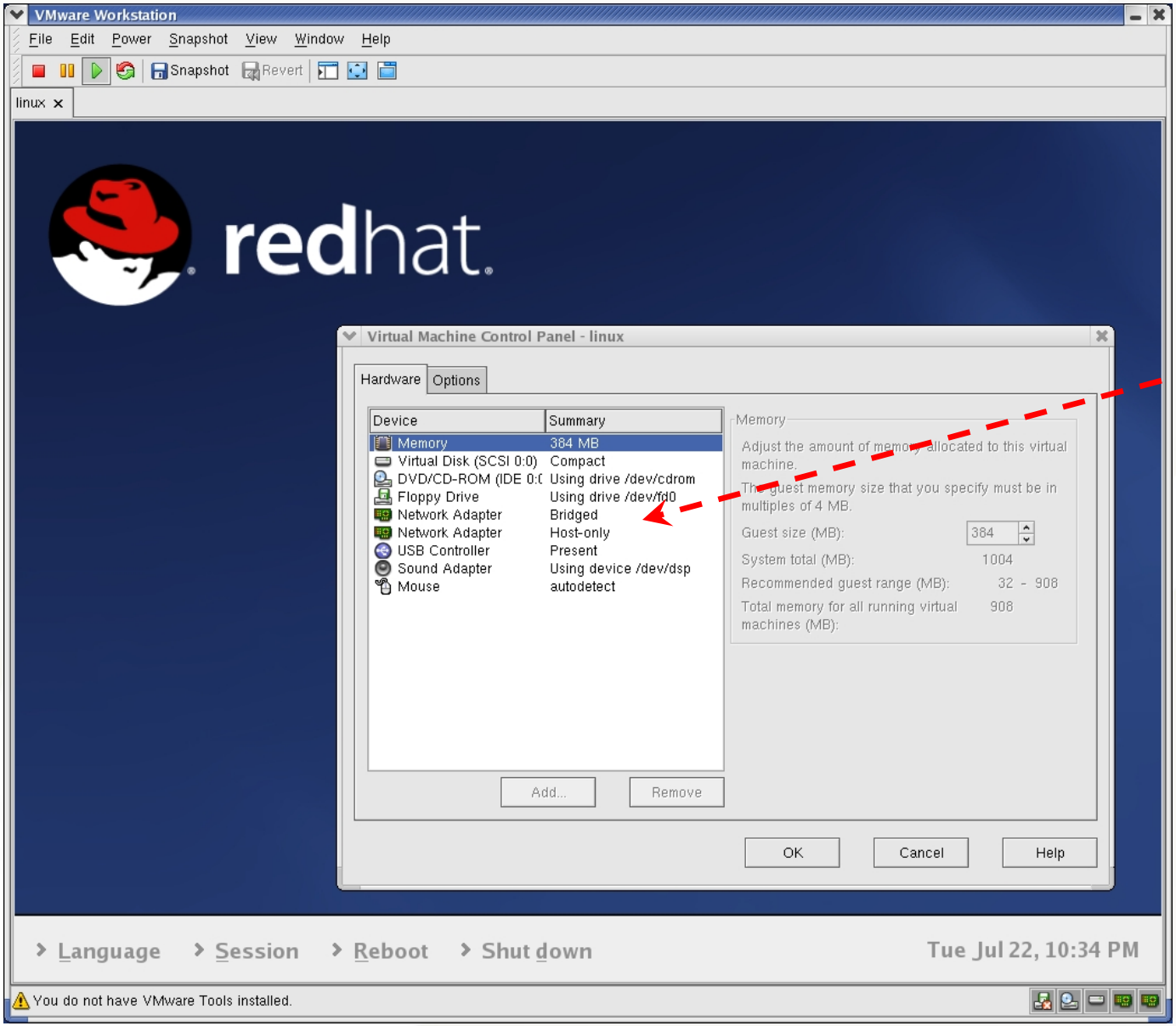
Running Windows Inside a Virtual Machine

- **Another product that makes running Windows applications possible is VMware®, which provides a virtual machine to share the workstation's CPU**
- **The performance is that of the native hardware, minus a small percentage**
- **Think of the virtual machine as a "container" inside which a complete Microsoft Windows operating system environment exists, unaware that it is being treated like just another application on the Linux system**
- **The virtual machine's software interfaces with the Linux hardware to provide networking, sound, graphics, USB, and other support**
- **To the operating system and software running in the virtual machine, it is a fully compatible x86 PC**
- **To Linux, the virtual machine appears as a process (and some other auxiliary processes)**
- **Running multiple virtual machines on the same system is possible if you have enough resources (CPU and RAM)**

More about VMware Workstation

- **The virtual machine uses files in the Linux file system as "virtual disks"**
- **Virtual machine configurations are portable and can be cloned (and backed up with "*tar*" or other tools)**
- **The virtual machine can roll back changes to the virtual disk when it terminates**
- **Only the space actually used is allocated from the Linux file system (i.e. the virtual disks are "sparse")**
- **The interface to the VMware software is X-based on Linux (it also runs on Windows), and can be shared across the network like other X-windows applications**
- **You must have licenses for all software that you run in the virtual machine**
- **The "guest" operating system is not limited to just Microsoft Windows, you can run virtually (pardon the pun) any x86-based operating system**

VMware Settings for Hardware

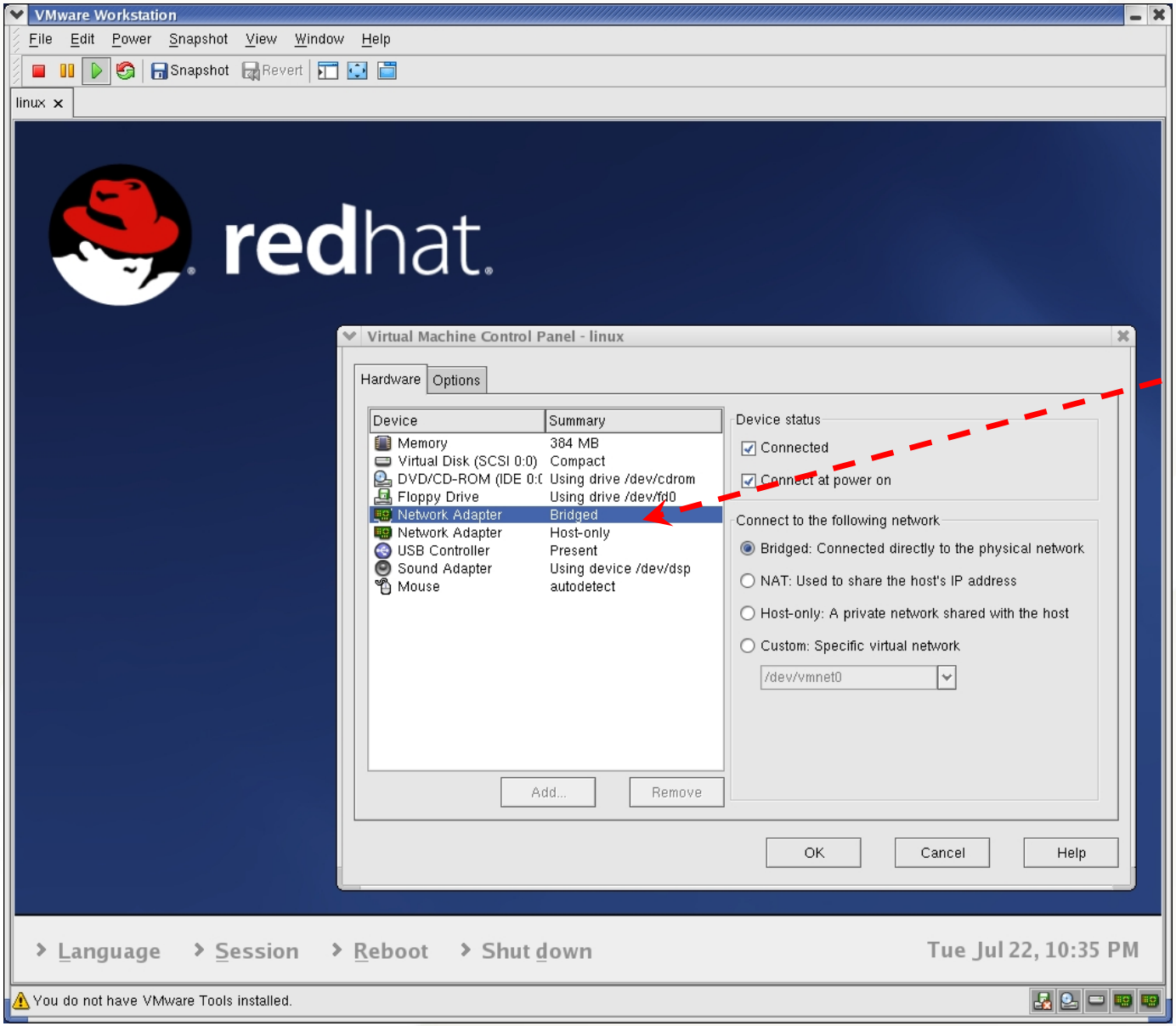


A Linux "guest" operating system running on a Linux "host" operating system.

The control panel shows the hardware being provided to the virtual machine's operating system (384 MB of RAM, DVD, etc.)

vmware

VMware Network Device Configuration

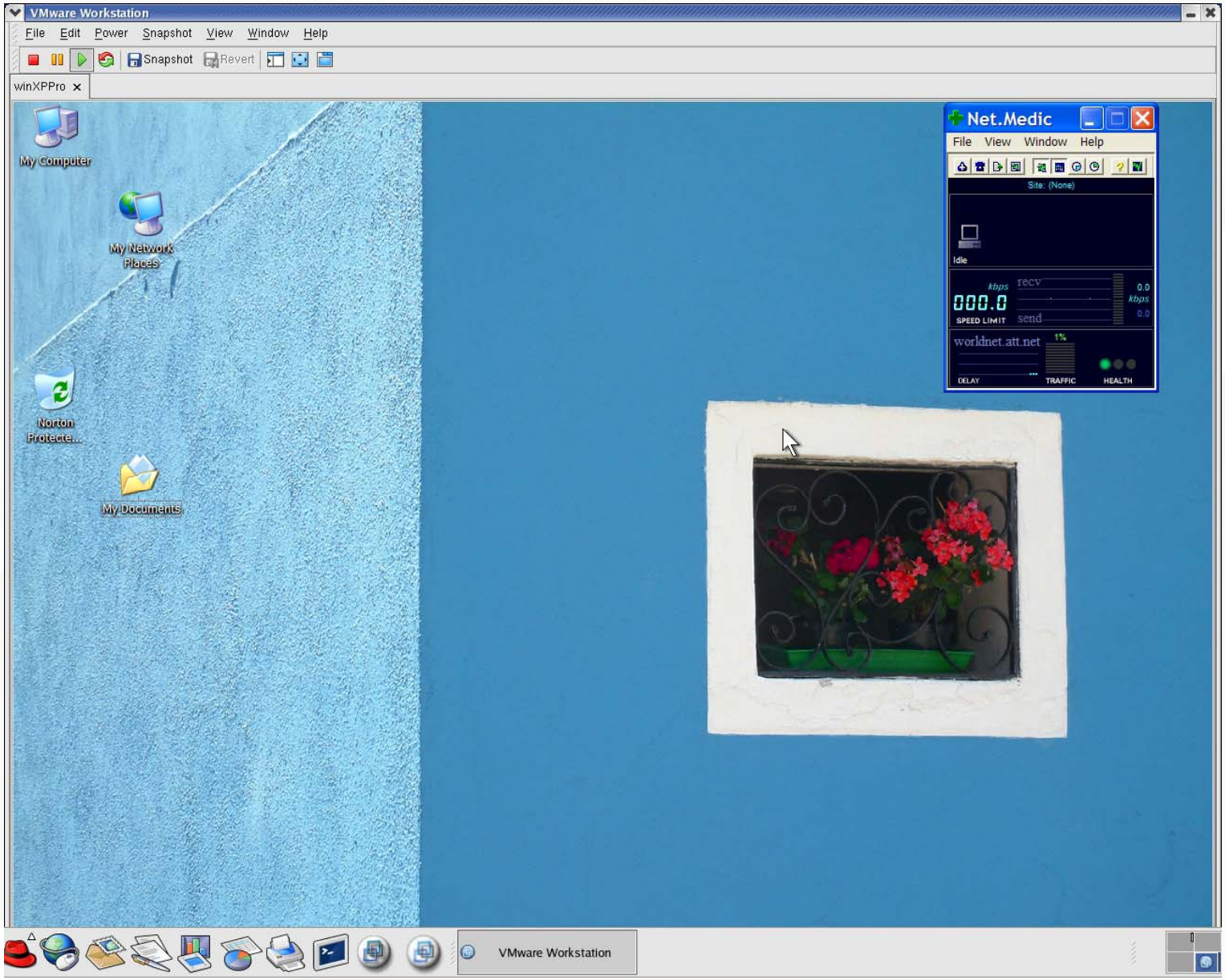


The VMware virtual machine is providing two network adapters to the guest operating system.

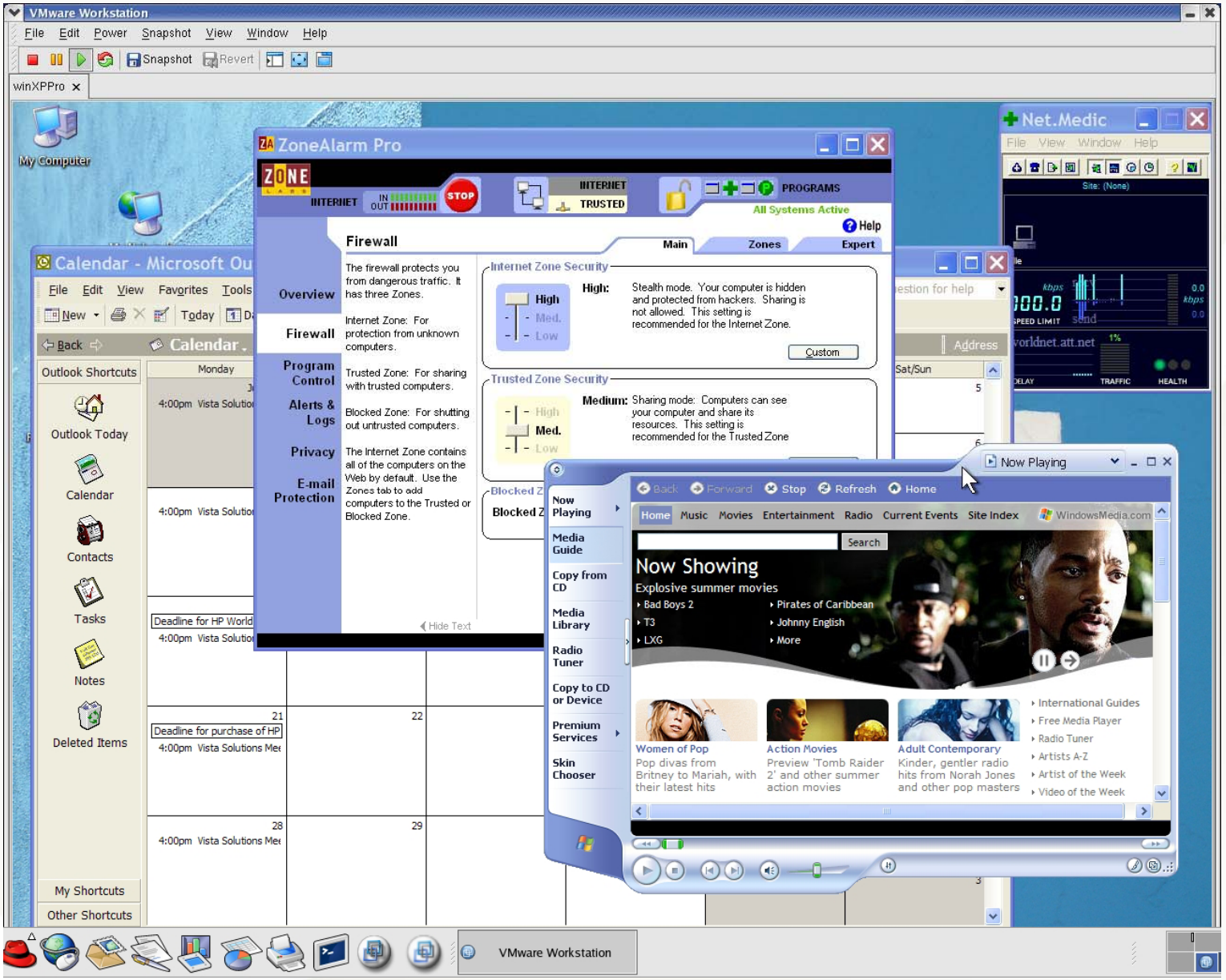
One is bridged to the host operating system's network (eth0) and the other is a "host-only" connection to share the local file system with the virtual machine's guest operating system.

vmware

VMware Windows Guest on Linux Host



VMware Running Windows Applications



Lab #3: Microsoft ® Windows ® Interoperability

See Lab #3 Handout for details

The Knoppix Linux Desktop

- **Knoppix is a freely-distributable desktop that can boot from a CD-ROM or DVD**
- **It provides a complete environment and does not touch your local disk to do it.**
- **Knoppix version 3.4 provides the Linux 2.4.26 or (as an option) the Linux 2.6.6 kernel**
- **An ISO image for CD-ROM burning is available from http://www.knoppix.org**
- **A great way to try Linux on your computer without installing it on the hard disk**

Lab #4: Knoppix
(If there is time …)

See Lab #4 Handout for details

VISTA SOLUTIONS

Time for questions or test-driving.

Thank you for coming.