

#### 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)

D

- 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 Xwindows system
- The implementation of the X-windows server is XFree86 from <u>http://www.XFree86.Org</u>, see also <u>http://www.X.Org</u> for the "stewardship" of X11
- There are several useful commands that you can use with the Linux X-windows server:
  - Ctrl-Alt-Backspace
  - Ctrl-Alt-*Keypad+*
  - Ctrl-Alt-Keypad-
  - Ctrl-Alt-F1 ... Ctrl-Alt-F12

Immediately kill the server Next video mode (resolution) Previous video mode 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
- xrdb
- xinit and startx

Set various X-windows options Set display and client resources Start up X-windows session

So, if you want complete control, use "xdm", and your ~/.xinitrc file:

> xrdb xsetroot xterm xconsole exec twm

-load \${HOME}/.Xresources -solid gray & -geometry -60+60 & -geometry -0+0 &

#### 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  $\rightarrow$  GDM
  - KDE  $\rightarrow$  KDM
  - $X \rightarrow XDM$
- 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





## Choosing a One-Time Desktop Session



## 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 "rightclick" 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?



## Logging Out of KDE





## Switching Desktops from Within Your Session



	You can run " <i>switchdesk</i> " with no
Desktop Switcher	query for your choice.
The Desktop Switcher is a tool which enables users to easily switch between various Desktops that they have installed. Please select the default desktop for the system.	You can also run the command in text mode: " <i>switchdesk kde</i> " will switch to KDE as your default desktop.
Available Desktops         Image: GNOME         Image: KDE	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.
□ Change only applies to current display          Image: Change only applies to current display	This is either <i>gnome-session</i> , <i>startkde</i> , or <i>/usr/X11R6/bin/twm</i> . Other desktop environments might be used if they have been loaded (i.e. WindowMaker).

#### A "switchdesk" Example





#### What "switchdesk" Really Does ...



## ~/.Xclients

## ~/.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

#! /bin/bash

# Created by Red Hat Desktop Switcher
if [ -e "\$HOME/.Xclients-\$HOSTNAME\$DISPLAY" ]; then
 exec \$HOME/.Xclients-\$HOSTNAME\$DISPLAY
also

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



✓ Login Screen Setup		- D X	
General Standard greeter Grap	hical greeter Security Accessibility XDMCP		
Greeter			Two main ways
L <u>o</u> cal:	Graphical greeter 😤		to login: Local
<u>R</u> emote:	Standard greeter 😤		These map to
Always use 24 hour clock	format		"on a locally
Welcome string:	Welcome		- attached display" or "on
Remote welcome string:	Welcome to %n		an XDMCP
Automatic Login			managed display (x
Login a user automatically	on first bootup		terminal)"
<u>Automatic</u> login username:	✓		
Timed Login			
Login a user automa <u>t</u> ically	after a specified number of seconds		
Timed login us <u>e</u> rname:	✓		
Seconds before login:	30		
🚱 <u>H</u> elp		X Close	

(continued 1)



Login S	Screen Setup	_ O X	
General	Standard greeter Graphical greeter	Security Accessibility XDMCP	
Logo		Background	Remote login i
		○ <u>N</u> o background ○ <u>Image</u> <b>©</b> Color ✓ <u>S</u> cale background image to fit	not configured by default to use any
	No Image	No Image	graphical information.
Miscella	→ <u>B</u> rows	ie ✓ Browse ✓ Only color on remote displays	
	how choosable user images ( <u>f</u> ace brov	vser) <u>B</u> ackground color:	
<b>S</b> H	lelp	X <u>C</u> lose	



(continued 3)





The " <i>gdmsetup</i> " Tool	(continued 4)		D
✓ Login Screen Setup         General Standard greeter Graphical greeter Security Art         Options         □ Enable accessibility modules         ✓ Make a sound when login window is ready         Sound file:       ✓ Brows	ccessibility XDMCP	Le Close	Accessibility           options for login           ace configured           bere

(continued 5)





## **Default KDE Session**





### **Default GNOME Session**





## 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





### Configuring Basic GNOME Desktop Options





# 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) (modified Mozilla) netscape (text-based browser) lynx (downloadable) opera (based on Mozilla's gecko) galeon (KDE browser) konquerer 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



✓ Mail & Newsgroups <u>File</u> <u>E</u> dit <u>V</u> iew <u>G</u> o <u>M</u> ess	age Tools Help	Thunderbird is
Get Mail Write Address Book	Reply Reply All Forward Delete Sunk Print Stop	the next
Folders	View:       All       ✓ Subject or Sender contains:       ⊆lear         Q       Ø       Subject       > Sender       Ø       Date       ♥	generation
		e-mail and
		news reader
		client from the
		folks that
		brought us
		Mozilla. It has
		advanced
		features like
		spam filtering,
		and multiple
		account
Done		management

#### The KDE Konqueror Browser



KDE Homepage - Conquer your Desktor	ı! - Konqueror		-	C
ocation <u>E</u> dit <u>V</u> iew <u>G</u> o <u>B</u> ookmarks	s <u>T</u> ools <u>S</u> ettings <u>W</u> indow <u>H</u> elp			
A. <. Þ. 👌 🗞 🕓 🖡	) 🕆 🖻 🖻 🔀 🍳 🔒 🕰			
Location: Whitp://kde.org/			<b>.</b>	1
ocation: KDE Homepage		Settings   Sitemap   Help   Contac	et U	5
	coment	Choose your location	,	
Inform		Search		l
<ul> <li>Home</li> <li>What is KDE?</li> <li>Screenshots</li> <li>Announcements</li> <li>General Information</li> <li>Documentation</li> <li>Supporting KDE</li> <li>People</li> </ul>	<b>Conquer your Desktop!</b> <b>KDE</b> is a powerful Free Software graphical desktop environment for Linux and Unix workstations. It combines ease of use, contemporary functionality, and outstanding graphical design with the technological superiority of the Unix operating system. More	kde.org Search	 	
<ul><li>Awards</li><li>KDE Stuff</li><li>History</li></ul>	[Latest Announcements   Latest News   Latest Applications ]			
Download	Latest Announcements		ł	
<ul> <li>Stable Version</li> <li>Development Source Code</li> <li>Applications (external)</li> </ul>	KDE 3.2.3 Released On June 9th 2004, the KDE Project released KDE 3.2.3. Read the detailed KDE 3.2.3 change log. For packages, please visit the KDE 3.2.3 info page and browse the KDE 3.2 Requirements list.	KDE CONFERENCE KDE Family	B-187	
Communicate				
Contact Us     Mailing Lists	KOffice 1.3.1 Released On May 4th 2004, the KDE Project released KOffice 1.3.1. KOffice is a free light-weight yet feature rich office solution that integrates with KDE and provides a variety of filters to	<ul> <li>News &amp; Information</li> <li>KDE News</li> <li>KDE Events</li> </ul>		
Deploy	interoperate with other popular office suites such as OpenOffice.org and Microsoft Office. Read	KDE Myths		
Enterprise     Application Documentation     Sysadmin Documentation  Develop	KDE Community Summit "aKademy" 2004 Registration The KDE project is proud to announce the international KDE conference 2004, held in Ludwigsburg, Germany. The conference program starts on August, 21st and is filled with talks, tutorials, a user conference, social events and a coding marathon. Registration is open now and is available for everybody interested. Read more about the KDE conference 2004.	<ul> <li>» KDE Projects</li> <li>Accessibility</li> <li>Artists</li> <li>Internationalization</li> <li>Usability</li> <li>Women</li> </ul>		

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*

![](_page_42_Figure_1.jpeg)

# The Ximian (Novell) *evolution* Organizer

![](_page_43_Picture_1.jpeg)

Calendar - Ximian Evolution		
<u>File Edit View A</u> ction	is <u>T</u> ools <u>S</u> earch <u>H</u> elp	
Shertsutz	Receive 😂 🦉 🖂 🏫 📂 😥 Go To 📋 Day 🛄 Work Week 🚎 Week 🛗 Month	The
Shortcuts	Satu Satu	Irday 26 June 2004 Ximian
<u> 2</u>	Category is 🔄 Any Category 🔄	Find Now Clear
Summary	Saturday 26 June 4 June 2004 July 2004	August 2004 COmpany
à	M 1 W 1 F S S       M 1 W 1 F S S         31 1 2 3 4 5 6       1 2 3 4         7 8 9 10 11 12 13       5 6 7 8 9 10 11       2 3	w r F S S 4 5 6 7 8 Was
Inbox	9 am 14 15 16 17 18 19 20 12 13 14 15 16 17 18 9 10 21 22 23 24 25 26 27 19 20 21 22 23 24 25 16 17 28 29 30 21 22 3 24 25 26 30 31 23 24	11 12 13 14 15 18 19 20 21 22 1 25 26 27 28 20 <b>purchased</b>
1. 1. 2.	10 <sup>am</sup> 30 31	
	11 am Summary	by Novell.
Calendar		The
	1 pm	evolution
Tasks	2 pm	product
S	3 pm	product
Contacts	4 pm	should
	5 pm	look a
	6 <sup>pm</sup>	little
	<b>7</b> pm	
	· · · · · · · · · · · · · · · · · · ·	tamılıar.
-		

#### The *evolution* Settings Window

![](_page_44_Picture_1.jpeg)

Evolution Settings	
Mail Accounts Mail Accounts Folder Settings Folder Settings Mail Preferences Mail Preferences Composer Preferences Composer Preferences Directory Servers Directory Servers Summary Preferences	<ul> <li>▲ General Display</li> <li>Time</li> <li>Time zone: America/Los_Angeles</li> <li>Time format:          <ul> <li>12 hour (AM/PM)</li> <li>24 hour</li> </ul> </li> <li>Work Week</li> <li>Week starts: Monday</li> <li>Work days:          <ul> <li>Mon </li> <li>Iue </li> <li>Wed </li> <li>Thu </li> <li>Fri </li> <li>Sat </li> <li>Sun Day begins: 09:00 AM </li> <li>Day ends: 05:00 PM </li> <li>Alerts</li> <li>Ask for confirmation when deleting items</li> <li>Show a reminder 15 </li> <li>Minutes </li> <li>before every appointment</li> </ul> </li> </ul>
	Apply X Close V OK

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

### CD Burning Software, *xcdroast*

![](_page_45_Picture_1.jpeg)

X-CD-Roast 0.98alpha15	X-CD-Roast 0.98alpha15
Non-Root-Mode configuration:         Welcome to X-CD-Roast!         You have now the opportunity to configure X-CD-Roast so, that not only the root user can start it, but any user you choose. Using the Non-Root-Mode is recommended and secure. You can change the mode anytime in the Users-Pane of the Setup-Menu.         Current status:       Non-Root-Mode deactivated	Version 0.98alpha15 Activate Non-Root-Mode The following commands will be executed in order to activate the Non-Root-Mode. Press OK when you are sure you want that. /bin/chown root /usr/lib/xcdroast-0.98/bin/xcdrwrap /bin/chmod 4755 /usr/lib/xcdroast-0.98/bin/xcdrwrap

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

![](_page_46_Picture_1.jpeg)

¥ X-CD-Roast 0.98alpha15		
	X-CD-Roast	P N S(
Setup	Version 0.98alpha15	it
Duplicate CD	(c) 1996-2003 by T. Niederreiter	re
Duplicate CD	http://www.xcdroast.org	י)
Create CD		T
		n n
		u
Exit		
	1	

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.

![](_page_47_Picture_0.jpeg)

# Lab #2: Useful Linux Graphical Tools

See Lab #2 Handout for details

# Choosing a CD Writer for *xcdroast*

![](_page_48_Picture_1.jpeg)

-CD-Roast 0.98alpha15									
		Setup							
	Device-Scan C	Device-Scan CD Settings HD Settings Miscellaneous Options Users							
	Туре	Device-Id	Vendor	Model	Rev.				
		[1,0,0]	MATSHITA	UJDA745 DVD/CDRW	1.04				
	1	[ATAPI:0,0,0]	MATSHITA	UJDA745 DVD/CDRW	1.04				
Save configuration									
Ok									
Cancel		Rescan devices		Manually add device					
		Please see http://www.xcdro	ast.org/faq when y	ou miss a drive this list.					

## Creating a CD with *xcdroast* ...

![](_page_49_Picture_1.jpeg)

❤ X-CD-Roast 0.98alpha15	
	Create CD
CD/Image Info	Devices-Setup Read Device: MATSHITA UJDA745 DVD/CDRW [1,0,0] ≚ ▲ ▼
Read Tracks	CD-Information Image-Information
Verify Tracks	Tracks Images
Play Audio-Tracks	
Master Tracks	
Write Tracks	Type: No CD loaded
Delete Tracks	Label:
Back to main menu	Size: Total Size: 0MB / 0:00.00
	Query CDDB Edit titles for CD-Text Update

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

#### Mounting SMB Shares

![](_page_50_Picture_1.jpeg)

![](_page_50_Figure_2.jpeg)

# Viewing Individual Samba Shares

![](_page_51_Picture_1.jpeg)

smb://nec2			
<u>F</u> ile <u>E</u> dit <u>V</u> iew <u>G</u> o <u>B</u> ookm	arks <u>H</u> elp		
Back Forward Up Stop	💫 👘 Reload Home		
Location: smb://nec2			- 100 + View as Icons 🞽
Information + ×			
	Backups	ISOs	Music
smb://nec2		<u>e</u>	
folder	Pictures	Raid5	Rob
		<u>e</u>	
	Software	Teri	
"NEC2" selected (0 bytes)			

#### Music Share After Authentication

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

![](_page_52_Picture_2.jpeg)

Music					_ = ×
<u>F</u> ile <u>E</u> dit <u>V</u> iew <u>G</u> o <u>B</u> ookm	arks <u>H</u> elp				
Back Forward Up Stop	🖗 👘 Reload Home				$\bigcirc$
Location: smb://nec2/Music				- 100 +	View as Icons 🖆
Information + ×					*
	Alanis Morissette 	America 	Atlanta Symphony Orchestra & Chorus	Bach's Circle	
folder					_
	Benedictine Monks Of Santo Domingo De Silos 	Blazing Redheads 	Bob Dylan 	Bob Seger & The Silver Bullet Band 	_
	Buena Vista Social Club 	Cat Stevens 	Chuck Loeb	Creed 	
	Creedence Clearwater Revival 	Crosby, Stills, Nash & Young 	Daryl Hall & John Oates 	David Lanz 	*
"Music" selected					

#### OpenOffice Tools

![](_page_53_Picture_1.jpeg)

- 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 <u>http://OpenOffice.org</u>

### OpenOffice Calc Spreadsheet

![](_page_54_Picture_1.jpeg)

#### <u>File Edit View Insert Format Tools Data Window Help</u>

		<b>_</b>			K ••• ••   =>	₽ *:	i 🖓 🖓		
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et 6									_
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10 B <sup>C</sup>							Cell Styles		
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ABC 12							Default		
<b>94</b> 14							Heading		
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Che She	et1 /Sheet2 /Sheet	13/		1					. 1
and and	Cra Volicers Volicei								14

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

#### OpenOffice Impress

![](_page_55_Picture_1.jpeg)

<u>F</u> ile <u>E</u> d	it <u>V</u> iew Insert Format Tools <u>S</u> lide Show <u>W</u> indow <u>H</u> elp	
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道 思いる (10 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1	Presentation       X         Insert Silde       Modify Silde Layout         Silde Design       Duplicate Slide         Expand Slide       R         Silde Design       R     <	OK Cancel
22		
23		
24		
B S		• •

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

#### OpenOffice Writer

![](_page_56_Picture_1.jpeg)

File Edit View Insert Format Tools Window Help

· <u>·</u> · · · 1 · · · 2 · · · 3 · · · 4 · · · 5 · · · 6 · · · 7 · · · 8 · · · 9 · · · 10 · · · 11 ·	<u>12131415</u>	·16· · ·17· · ·18·
Adding Linux To Your EDA Environment	Paragraph Styles	
The Linux operating system, and open-source software in general, useful development for those trying to save money in their electron environments. It is important, however, to make sure that Linux fi existing infrastructure, and that the necessary changes are well unc modifying the design environment. Like any other tool at your dis specific areas where it is directly applicable and others where it ma	Complimentary close Default First line indent Hanging indent Heading Heading 1 Heading 2	
Linux Advantages • Runs on commodity hardware • Interoperates well with other Unix operating systems • Familiar system administration practices • Can save operating system license costs • Stable, flexible operation	Heading 2 Heading 3 Heading 5 Heading 5 Heading 7 Heading 7 Heading 7 List Indent Marginalia Signature	
Because Linux runs very well on commodity hardware, adding it t environment can allow you to choose the best hardware price/perfa among platforms supplied by multiple vendors. Choosing commo appropriate, can save you money on a per-system basis.	Text body Text body indent	
Linux is a Unix <sup>®</sup> -like operating system, which means that it intero <sub>F</sub> Unix infrastructure services like DNS, sendmail, NIS, and NFS. Fa means that your system administrators can reuse much of their exis management experience with Linux, and you may find it possible to provide selected infrastructure services to your entire Unix environ	amiliar infrastructure sting Unix system o use Linux systems to ment.	
Linux is stable, flexible, and freely available. Because Linux is op various distributions are available free of the normal operating syst can save money. In addition, the software subsystems available on	en-source software, em license fees, which	

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

#### **Crossover Office**

![](_page_57_Picture_1.jpeg)

- 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 <u>http://Www.CodeWeavers.Com</u>
- 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

![](_page_57_Picture_8.jpeg)

# CrossOver Office Setup

![](_page_58_Picture_1.jpeg)

Office

CrossOver Office Setup CrossOver Office Setup Add/Remove Associations Menue Configuration Installed software Microsoft Office 2000 Microsoft Office 2000 Service Release 1 a Update Microsoft Office 2000 Service Release 3 Update Microsoft Visio Adobe Photoshop Repair / Remove New software New software To add new software, click Install. Help	<ul> <li>You can create file-type associations and MIME types that start the applications for e-mail attachments</li> <li>You can choose which tools are integrated into the Linux desktop menus</li> <li>Some of the supported tools are listed in the "Installed Software" window</li> </ul>
Copyright 2003, Codeweavers, Inc. version 2.0.1 OK Cancel Apply	Croce

#### CrossOver Office File Associations

![](_page_59_Picture_1.jpeg)

CrossO	ver Office S	Setup		_ = ×
	2			
C	10S		etup	
	-	Office	1	
Add/Ren	nove \ Ass	ociations 🔪 Menus 🗸 Configurati	on \	
lean	Extension	Mimo Tuno	Application	Enabled
	Extension		Application	Ellableu
	rtf	application/msword	winword.exe	
	pot	application/vnd.ms-powerpoint	powerpnt.exe	
	pps	application/vnd.ms-powerpoint	powerpnt.exe	
<b>E</b>	ppt	application/vnd.ms-powerpoint	powerpnt.exe	
Show common file types only				
Help				
Copyrigh	nt 2003, Co	deweavers, Inc.		version 2.0.1
		0	K Cance	I Apply

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

![](_page_59_Picture_5.jpeg)

#### Example Desktop with Outlook and Internet Explorer 6

![](_page_60_Figure_1.jpeg)

#### Example Desktop Running ViSiO and Adobe Photoshop

![](_page_61_Picture_1.jpeg)

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

![](_page_61_Picture_3.jpeg)

#### Example Desktop with Microsoft Word and Excel

![](_page_62_Picture_1.jpeg)

![](_page_62_Figure_2.jpeg)

#### An Example Launcher for CrossOver Office

✓ Launcher P	roperties	
Basic Advance	ed	An
Name:	Microsoft Outlook	example
Generic name:		launcher
Comment:	Send and receive e-mail; manage your schedule, contacts, and tasks; and record your activities by using Microsoft Outlook.	for
Command:	/opt/cxoffice/bin/wine "://Program Files//Microsoft Office//Office//OUTLOOK.EXE"	Outlook
Type:	Application	
lcon:	Run In Terminal	
	i i i i i i i i i i i i i i i i i i i	
🔀 <u>H</u> elp	Image: Revert     Image: Close	
	Note the path that is passed to <i>wine</i> . It is relative to	

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

![](_page_63_Picture_3.jpeg)

#### Running Windows Inside a Virtual Machine

![](_page_64_Picture_1.jpeg)

- 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)

![](_page_64_Picture_9.jpeg)

#### More about VMware Workstation

![](_page_65_Picture_1.jpeg)

- 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

![](_page_66_Picture_1.jpeg)

VMware Workstation File Edit Power Snapshot View Window Help File Edit Power Snapshot Revert To The Theorem Control Panel - Linux Inux x Virtual Machine Control Panel - Linux Virtual Machine Control Panel - Linux Virtual Machine Control Panel - Linux Virtual Machine Control Panel - Linux Memory Adjust the amount of memory allocated to this virtual Memory Memory Memory Stat Me Virtual Disk (SCSI 0:0) Compact Virtual Disk (SCSI 0:0) Compact Povice Summary Memory Memory Stat Me Povice Using drive /dev/cdrom Figure Snearest that you specify must be in mittiples of 4 MB.		
Sound Adapter       Using device /dev/dsp autodetect         Mouse       Add         Add       Remove         Language       Session       Reboot       Shut down	Becommended guest range (MB):       32 - 908         Total memory for all running virtual       908         machines (MB):       908         OK       Cancel         Help         Tue       Jul 22, 10:34 PM	
A You do not have VMware Tools installed.		

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.)

![](_page_66_Picture_5.jpeg)

#### VMware Network Device Configuration

![](_page_67_Picture_1.jpeg)

VMware Workstation	
<u>File Edit Power S</u> napshot <u>V</u> iew <u>W</u> indow <u>H</u> elp	
📕 💷 🕑 🊱 🕞 Snapshot 🖓 Revert 🗔 🔛	
Virtual Machine Control Panel - linux         Virtual Machine Control Panel - linux         Hardware Options         Options         Virtual Disk (SCSI 0:0)         Compact         VOV/CD-ROM (IDE Dct Using drive /dev/tg0         Ploppy Drive       Using drive /dev/tg0         Network Adapter       Bridged         Visual Adapter       Using device /dev/dsp         Sound Adapter       Using device /dev/dsp         Mouse       autodetect	Device status Connected Connect at power on Connect to the following network Bridged: Connected directly to the physical network NAT: Used to share the host's IP address Host-only: A private network shared with the host Custom: Specific virtual network /dev/vmnet0
	OK Cancel Help
> Language > Session > Reboot > Shut down	Tue Jul 22, 10:35 PM
A You do not have VMware Tools installed.	

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.

![](_page_67_Picture_5.jpeg)

#### VMware Windows Guest on Linux Host

![](_page_68_Picture_1.jpeg)

![](_page_68_Picture_2.jpeg)

#### VMware Running Windows Applications

![](_page_69_Picture_1.jpeg)

![](_page_69_Picture_2.jpeg)

![](_page_70_Picture_0.jpeg)

# Lab #3: Microsoft ® Windows ® Interoperability

See Lab #3 Handout for details

#### The Knoppix Linux Desktop

![](_page_71_Picture_1.jpeg)

- 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 <u>http://www.knoppix.org</u>
- 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.