

# [StuCo 98008] GNU/Linux for Beginners

## **Session 4**

Window Managers  
X Applications

# By the end of this lecture you will know

- A lot of buzzwords
  - KDE, GNOME, WindowMaker, BlackBox, TWM
  - OpenOffice.org, KOffice, Abiword, Gnumeric
  - Mozilla, Galeon, Epiphany, Konqueror, Firebird
  - Grip, MPlayer, K3B, Gcombust
  - GIMP, Dia, Kivio
- That there is no one “Linux” look or configuration.
- That choosing your poison can be a daunting task.

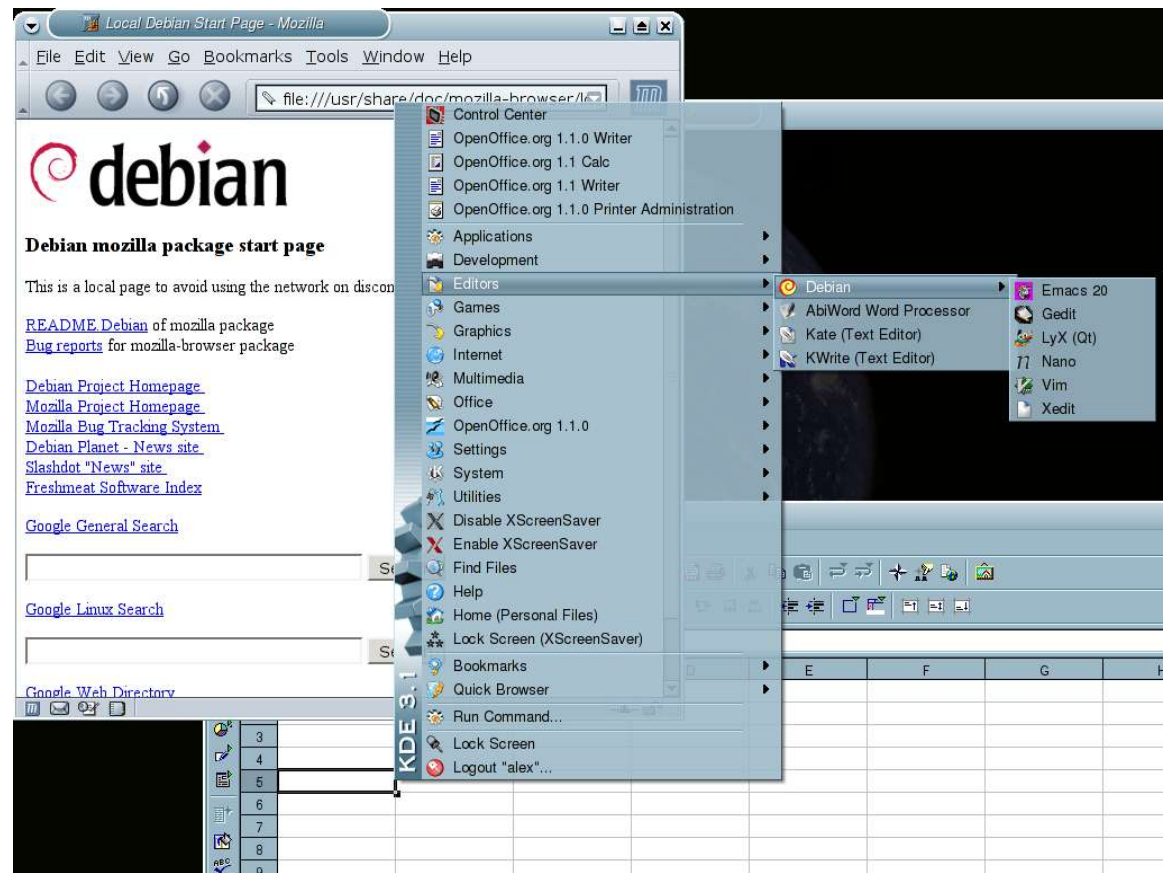
# Desktop Environments

- Control your GUI's look & feel
  - Menus
  - Window decorations and handling
  - Icons
  - Applets
- Dominant Players
  - KDE
  - GNOME
  - WindowMaker
  - Enlightenment
  - BlackBox
  - TWM

# KDE

- Pros

- Absolutely fluffy
- Huge user base
- Excellent native applications



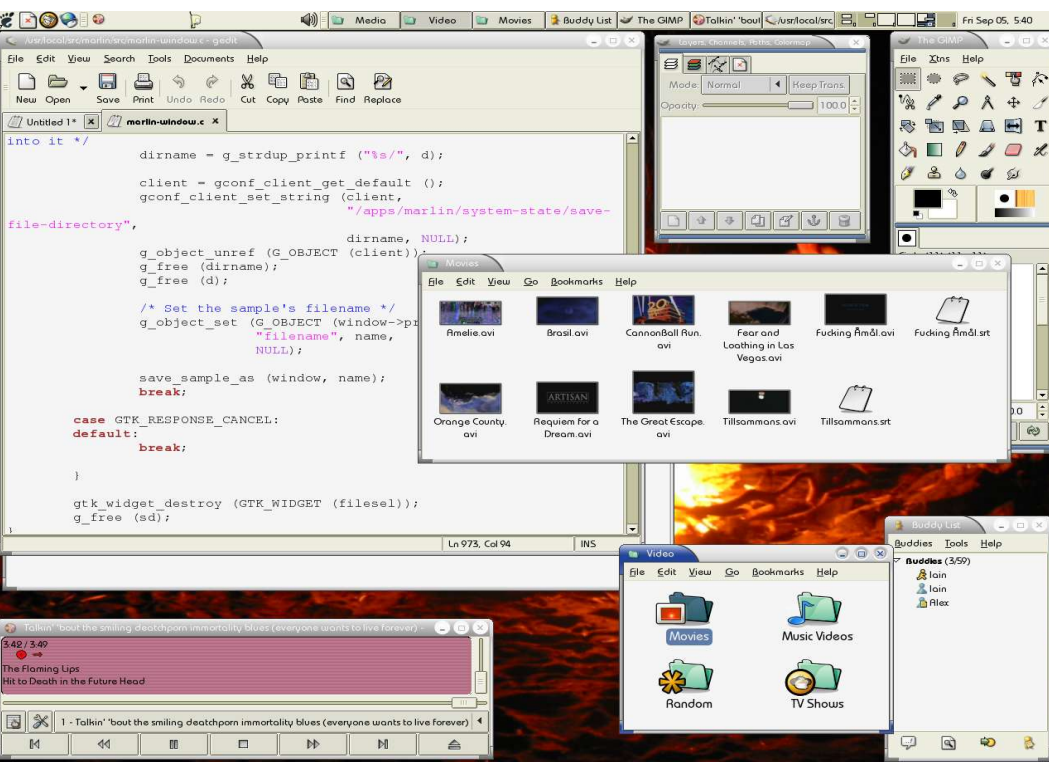
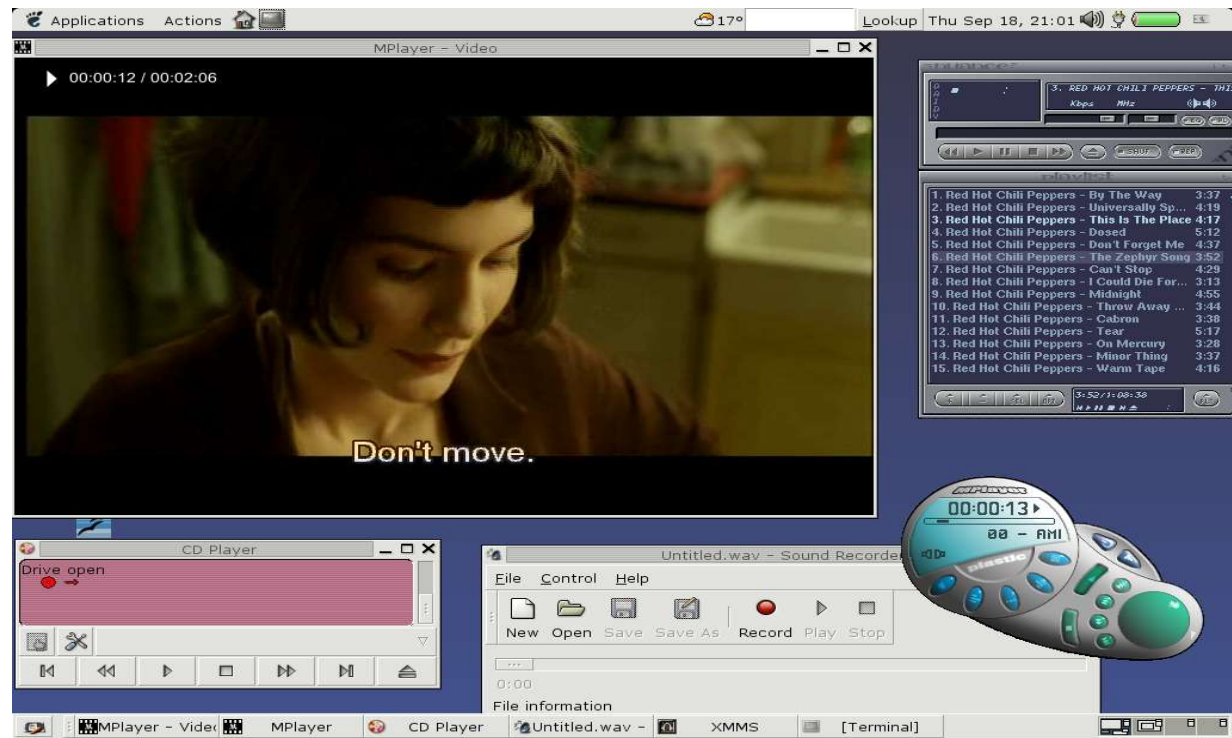
- Cons

- Resource hog
  - CPU (266MHz+)
  - RAM (128MB+)
  - Disk space (150MB+)
- Too smart for its own good?

# GNOME

- Pros

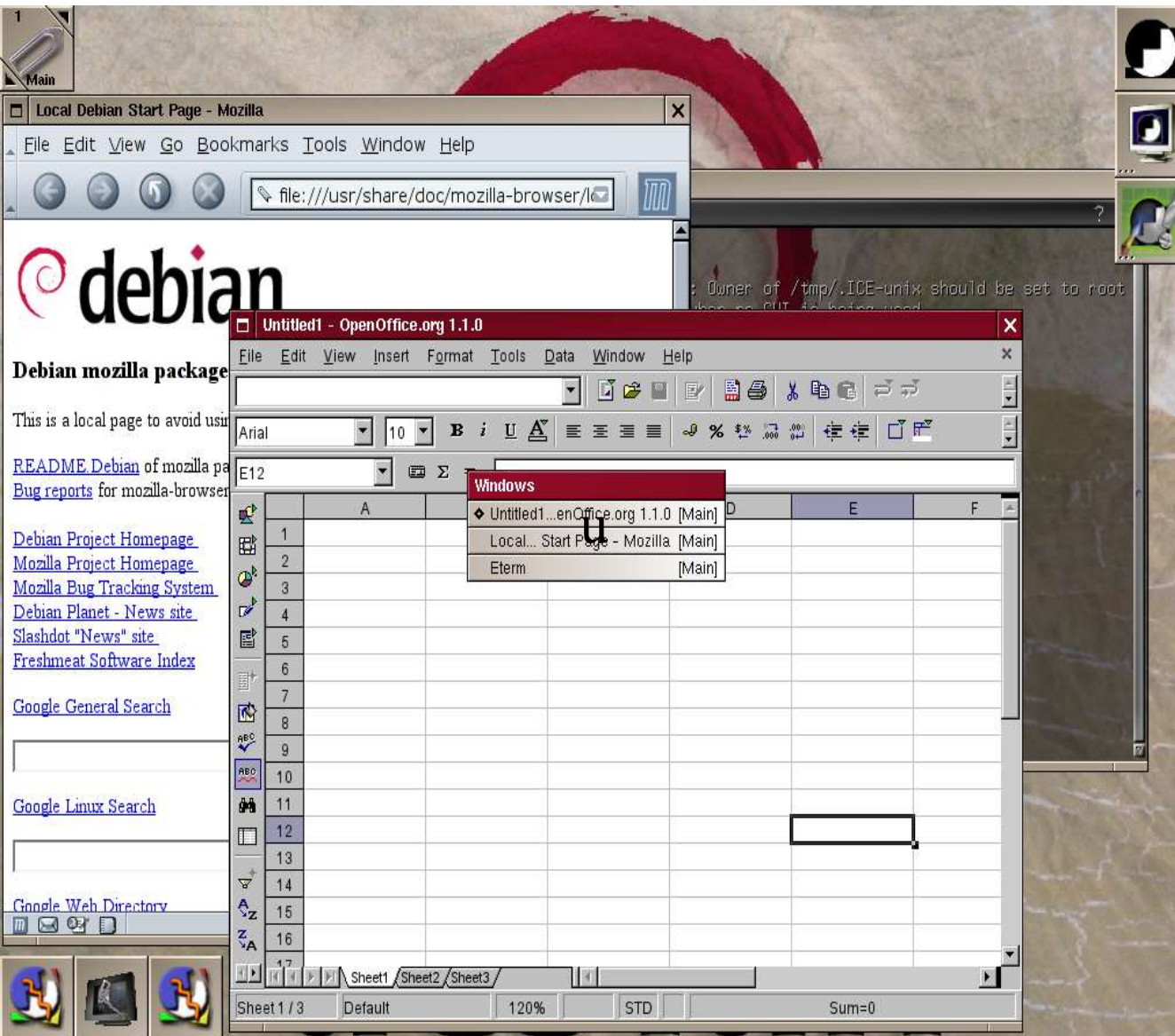
- Customizable
- Faster than KDE
- Native apps



- Cons

- Less intuitive than KDE for MS-Windows users
- Disk space (150MB+)

# WindowMaker



- Pros

- Lightweight
- Powerful

- Cons

- Even less intuitive for MS-Windows users
- Being superseded by big-2 (KDE/GNOME)

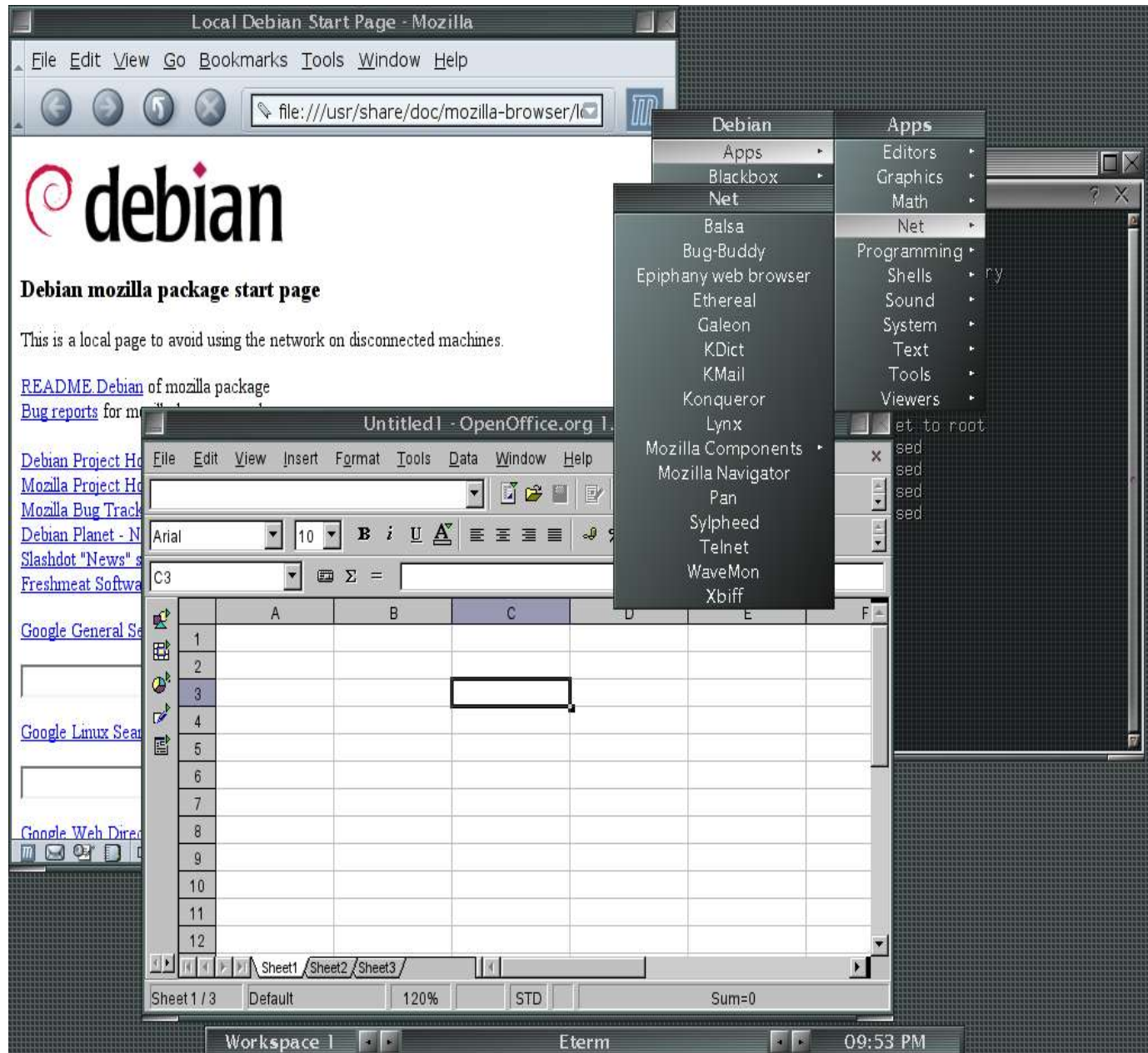
# BlackBox

- Pros

- Very small and lightweight
- Can even be statically compiled for emergency toolkits.

- Cons

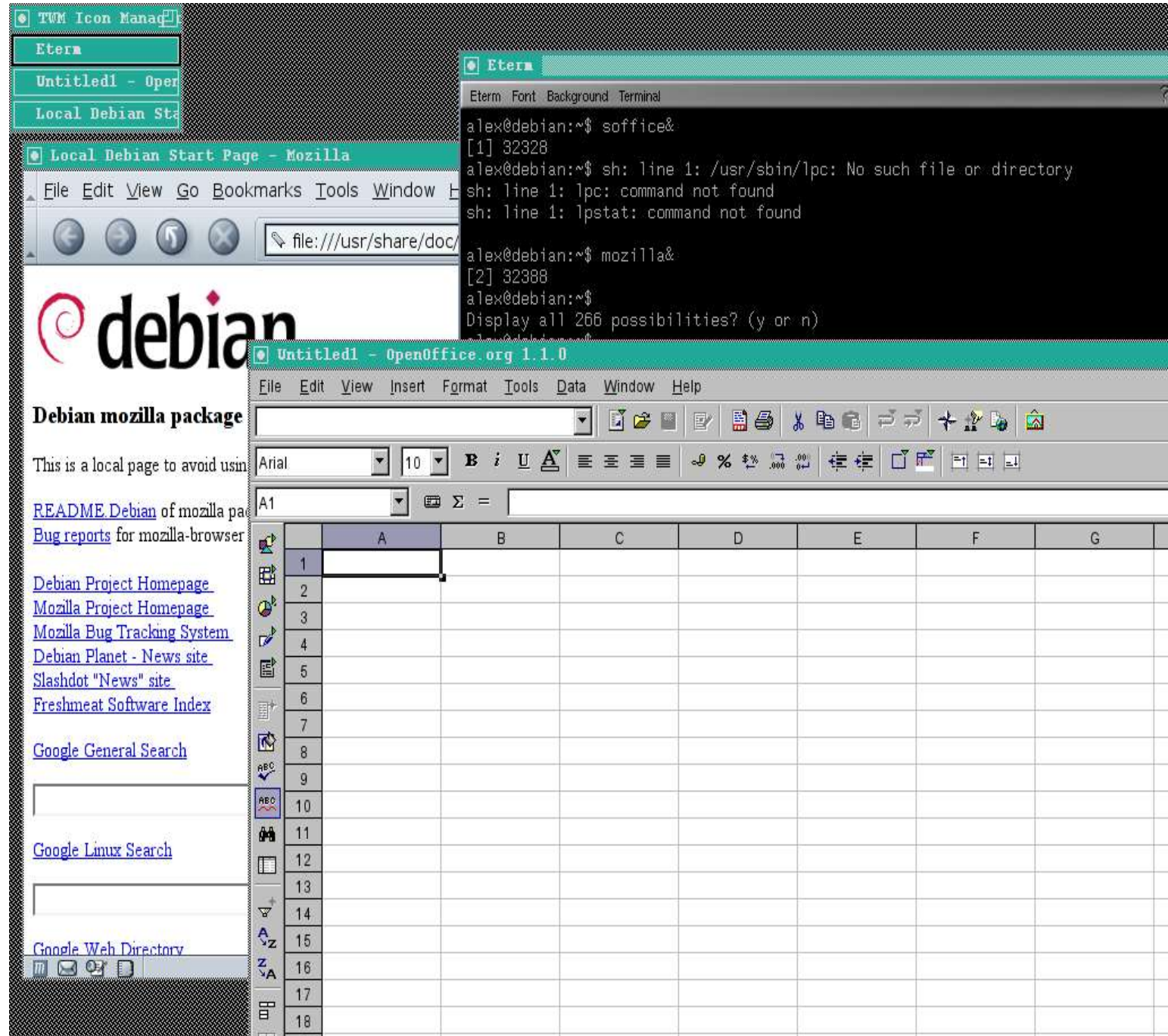
- Small user base
- Too minimalistic?



# Tab Window Manager

- Pros

- Negligible memory footprint
- Fast!



- Cons

- Limited functionality
- No fluff



# X Applications

- Browse the web
- Use email
- Chat online
- Listen to music – watch DVDs/VCDs
- Burn CDs
- Edit audio, video and still images
- Do work!

# Web Browsers



# Email Clients

The screenshot displays two email client windows on a Linux desktop. The top window is Mozilla, titled "Inbox for apapadop@cmu.edu - Mozilla". The bottom window is KMail, titled "Local Folders/inbox - KMail".

**Mozilla Email List:**

Subject	Sender	Date	Priority
[IP] BBC: UK bans spam messa...	Dave Farber	20:11	
[IP] more on JetBlue,	Dave Farber	20:14	
No meeting tomorrow	Thomas Zhuo Yi'nan	21:26	Normal

**KMail Email List:**

Subject	Sender	Date
Re: I'm in the room we met last time (big...	Srini Ramakrishnan	Today 17:42:05
- FW: Three Easy Pieces for Any Decent ...	Jennifer Randall	Today 11:19:25
- Re: OSS paper topic discussion	Srini Ramakrishnan	Today 10:09:34
- iptables -L -v solved my worries. :)	Devin Lee Drew	Today 01:08:57
- iptables question	Devin Lee Drew	Today 01:02:09
FW: Fire Rumsfeld and Change Course	Jennifer Randall	Yesterday 21:45:06
- Re: Its up -- Re: sorry man -- I forgot to t...	Devin Lee Drew	Yesterday 20:52:14
Its up -- Re: sorry man -- I forgot to turn ...	Devin Lee Drew	Yesterday 19:22:07

**Selected Email in KMail:**

**Subject:** iptables -L -v solved my worries. :)  
**From:** Devin Lee Drew <ddrew@andrew.cmu.edu>  
**To:** Alexandros Papadopoulos <apapadop@cmu.edu>

**Encrypted message**  
Message was signed by ddrew@andrew.cmu.edu (Key ID: 0xF1A3515623D1B232).  
The signature is valid and the key is fully trusted.

Chain RH-Lokkit-0-50-INPUT (2 references)

# Editors

The image displays a Linux desktop environment with several code editors open. The desktop background is dark blue. The top panel shows the system tray with the date and time: Thu Sep 18, 21:11. The taskbar at the bottom contains icons for Kate, KWrite, and a terminal window.

**gedit** (highlighted with a red circle):  
Title: /home/alex/doc/cmu/term1/95-712 Java/Homeworks/Problem4/Calendar.java - gedit  
Menu: File Edit View Search Tools Documents Help  
Code:

```
1 /*Alexandros Papadopoulos
2  *Calendar.java
3  */
4
5 import java.lang.*;
6
7 class Calendar{
8     Date firstDate; //1st day of specified calend
9     + year
```

**emacs20@debian** (highlighted with a red circle):  
Title: emacs20@debian  
Menu: Buffers Files Tools Edit Search Mule Minibuf Help  
Code:

```
/*
Java Homework #1
Alexandros Papadopoulos
12/09/02
*/
class Palindrome{

    public static void main(String args[]){

        String orxeis = new String(args[0]);
        System.out.println();
        System.out.println("Okay, I'll seek and destr
s: " + args[0]);
        System.out.println();
        //Create a file object with our file phrases
        t file = new SimpleInput("phrases")

        StringObject on which we'll do even
= 0; i < 3; i++){
        Object ob1 = new StringObject(file.
isplayStringObject();
```

**Kate** (highlighted with a red circle):  
Title: Stack.java - Kate  
Menu: File Edit Document Bookmarks View Tools Settings Help  
Code:

```
/*Alexandros Papadopoulos
Suppose all push/pop operations are performed on left end of the deque
since we're implicitly treating it as a stack here.
*/
class Stack extends Deque{
    public Stack(int sz){
        //call the constructor for Deque
        super(sz);
    }

    public void push(String stg){
        //insert a string into the stack
        super.insertLeft(stg);
    }
}
```

**KWrite** (highlighted with a red circle):  
Title: TestTwoWayTable.java - KWrite  
Menu: File Edit View Bookmarks Tools Settings Help  
Code:

```
public class TestTwoWayTable{
    public static void main(String [] args){
        int i,j;
        int [] [] testArray = {
            {
                TwoWayTable t = new TwoWayTable (testArray);
                System.out.println(t);
            }
        }
    }
}
```

The terminal window at the bottom shows the following commands and output:

```
alex@debian:~$ cd '/data/alex/doc/cmu/term1/95-712 Java/Homeworks/Pro
blem3_2'
alex@debian: /data/alex/doc/cmu/term1/95-712 Java/Homeworks/Problem3/P
$
```

# Graphics/Imaging

The screenshot displays a Linux desktop environment with several windows open. The top panel shows system information: Applications, Actions, 17°C, Lookup, Thu Sep 18, 21:35. The desktop background is a blue abstract image.

The main window is **Dia v0.9.1**, showing a diagram titled **GUI (Knetfilter)**. The diagram illustrates the flow of data from a GUI application through a CLI (bash) to a networking subsystem (netfilter). The CLI window shows the command: `[root@tux]# iptables -P INPUT DROP`. The networking subsystem is shown as a red box containing **netfilter**.

Other windows include **The GIMP** (image editor) showing a file named **userland\_kernel\_space.png-0** with a **Background** layer. The **Terminal** window shows the command `[root@tux]# iptables -P INPUT DROP`. The **pic** window shows a diagram of the system architecture with three main layers: **USERLAND** (Application, Window Manager, X server, Shell, Terminal), **KERNEL SPACE** (Netfilter subsystem, Linux Kernel), and **HARDWARE** (Network device).

The desktop also shows a file manager window with several image files: **5172-1.jpg** (403,0 K), **cfa-down.jpg** (32,4 K), and **choose linux.jpg** (200,3 K). The **Layers, Channels & Paths** panel shows the **Background** layer selected. The **Tool Options** panel shows the **Magnify Tool** selected.

# Audio/Video

MPlayer - Video

00:00:12 / 00:02:06

Don't move.

pedestal.wav 223,05 sec. 9836652 frames

The screenshot shows the MPlayer interface. The main window displays a video frame with the subtitle "Don't move." Below the video is a green audio waveform. The status bar at the bottom shows "pedestal.wav 223,05 sec. 9836652 frames".

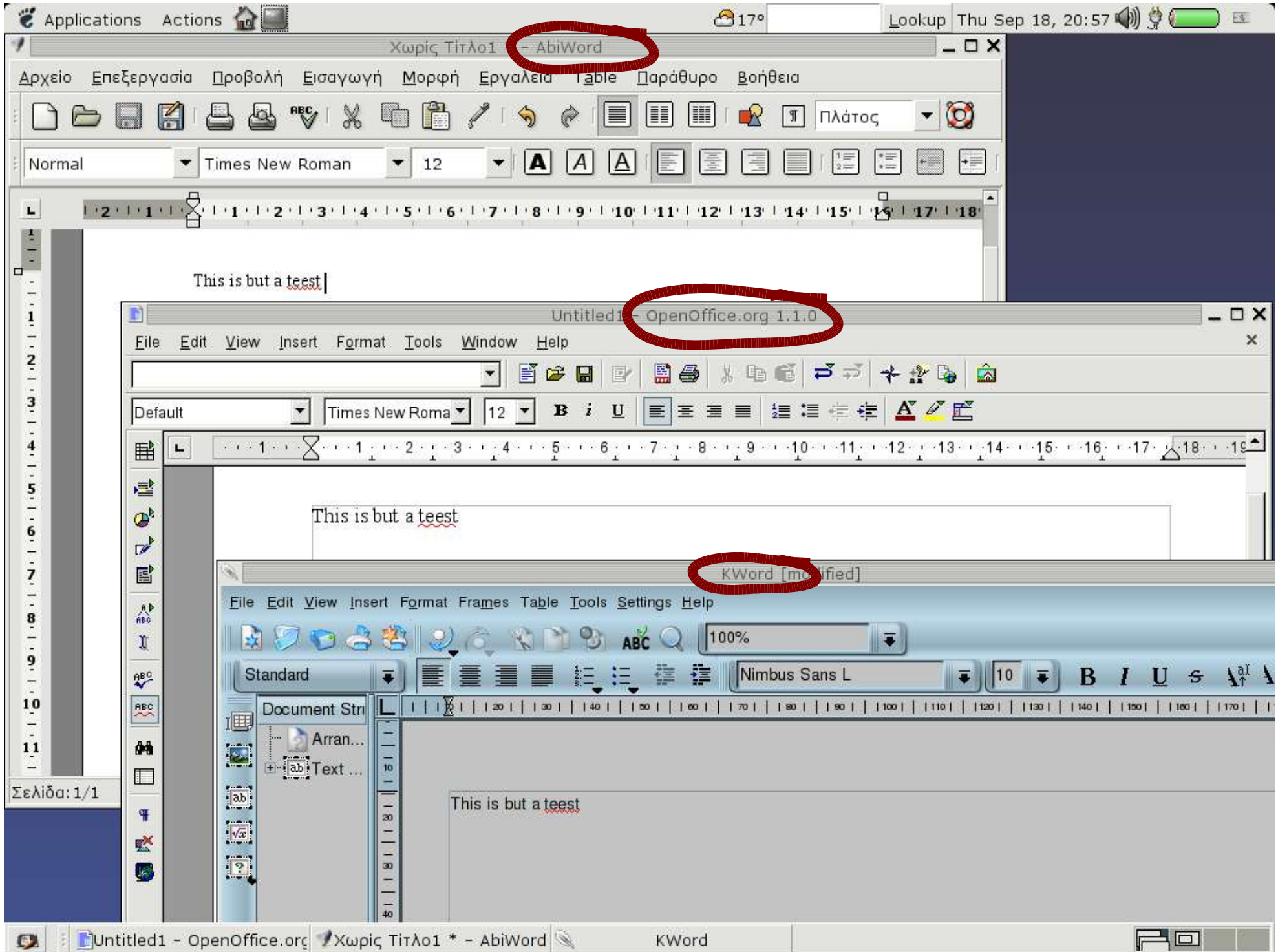
XMMS

GNUsound

MPlayer



# Word Processors



# Spreadsheets

The image displays three overlapping windows of spreadsheet software. The top window is OpenOffice.org 1.1.0, showing a menu bar (File, Edit, View, Insert, Format, Tools, Data, Window, Help) and a toolbar with various icons. The spreadsheet grid is visible with columns A-H and rows 1-4. The middle window is Gnumeric, titled 'Book1.gnumeric : Gnumeric', with a menu bar (File, Edit, View, Insert, Format, Tools, Data, Help) and a toolbar. The spreadsheet grid shows columns A-M and rows 1-23. The bottom window is KSpread, titled 'KSpread [modified]', with a menu bar (File, Edit, View, Insert, Format, Data, Tools, Settings, Help) and a toolbar. The spreadsheet grid shows columns A-H and rows 1-9. Red circles highlight the application names in the title bars of each window.

Applications Actions 17° Lookup Thu Sep 18, 20:43

Untitled1 OpenOffice.org 1.1.0

File Edit View Insert Format Tools Data Window Help

Arial 10 **B** *i* U

A1  $\Sigma$  =

Book1.gnumeric : Gnumeric

File Edit View Insert Format Tools Data Help

$f(x)$  100%

Sans 10 **A** *A* A

A1 =

A1

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

Sheet 1 / 3

KSpread [modified]

File Edit View Insert Format Data Tools Settings Help

$f(x)$  100%

Nimbus Sans L 10 **A** *I* U

A1

1 2 3 4 5 6 7 8 9

Untitled1 - OpenOffice.org KSpread Book1.gnumeric : Gnumeri



# Networking

The screenshot displays a Linux desktop environment with several windows open. The top window is the 'Nessus "NG" Report', which shows a list of detected services on a host (127.0.0.1). The services listed include: unknown (port/tcp), sun-answerbook (80/tcp), nessus (1241/tcp), lpp (631/tcp), general/tcp, and ftp (21/tcp). A 'Security Warning' is highlighted, indicating a 'Security Hole' for the ftp service. Below the report, a terminal window shows the output of the 'nmap' command, which scanned 1653 ports and found several open services: ftp (21/tcp), http (80/tcp), lpp (631/tcp), and sun-answerbook (8888/tcp). The terminal also displays the output of the 'iwconfig' command, showing the configuration for the eth0 interface, including the ESSID 'IE', link quality 24/92, signal level -111 dBm, noise level -149 dBm, and signal-to-noise ratio +38 dB. The desktop environment includes a menu bar with 'Applications' and 'Actions', a system tray with a clock showing 'Thu Sep 18, 21:25', and a taskbar at the bottom with icons for 'Terminal', 'Nmap Front E', and 'Nessus "NG" F'.

**Ethereal**

No.	Time	Source	Destination
25	13.033271	141.151.189.79	62.134.147.35
27	13.212436	62.134.147.35	141.151.189.79
28	13.212457	141.151.189.79	62.134.147.35
29	13.394967	141.151.189.79	62.134.147.35
30	13.579836	62.134.147.35	141.151.189.79
31	13.871768	62.134.147.35	141.151.189.79
32	13.871810	141.151.189.79	62.134.147.35
33	13.872664	141.151.189.79	62.134.147.35
34	13.874375	141.151.189.79	62.134.147.35
35	13.996186	62.134.147.35	141.151.189.79
36	14.026707	141.151.189.79	62.134.147.35
37	14.048373	62.134.147.35	141.151.189.79
38	14.081627	62.134.147.35	141.151.189.79

**Nessus "NG" Report**

Subnet: 127.0.0

Port:

- unknown (port/tcp)
- sun-answerbook (80/tcp)
- nessus (1241/tcp)
- lpp (631/tcp)
- general/tcp
- ftp (21/tcp)

Severity:

- Security Warning
- Security Note
- Security Hole

This FTP service allows anonymous logins. If you want to share data with anyone you do not know, you should disable the anonymous account, since it can only cause trouble. Under most Unix system, doing :

**WaveMon**

```
Interface
eth0 (IEEE 802.11-DS), ESSID: "IE", nick: "Prism I"
Levels
link quality: 24/92
-----
signal level: -111 dBm (0.00 uW)
-----
noise level: -149 dBm (0.00 uW)
-----
signal-to-noise ratio: +38 dB
-----
Statistics
RX: 2841 (2068196), TX: 800 (99492), inv: 0 nwid, 0 key, 0 misc
Info
frequency: 2.4570 GHz, sensitivity: 1/3, TX power: 15 dBm (31.62 mW)
mode: managed, access point: 00:60:B3:6F:A4:1C
bitrate: 11 Mbit/s, RTS thr: off, frag thr: off
encryption: n/a
power management: off
Network
if: eth0, hwaddr: 00:20:EO:8D:01:2D
```

Terminal

```
Frame 25 (76 bytes on wire, 76 bytes captured)
Linux cooked capture
Internet Protocol, Src Addr: 141.151.189.79 (141.151.189.79)
0000 00 04 02 00 00 00 00 00 00 00 00 00 00 08 00
0010 45 00 00 3c bf 23 40 00 40 06 5f 08 8d 97 bd 4f
0020 3e 86 93 23 c4 8a 3c 8d 5b 3c 8b 6c 00 00 00 00
0030 a0 02 16 b0 f8 4c 00 00 02 04 05 ac 04 02 08 0a
```

Filter: (ip.addr eq 141.151.189.79 and ip.addr eq 62.134.147.35)

```
(The 1653 ports scanned but not shown below are in state closed)
PORT      STATE SERVICE
21/tcp    open  ftp
80/tcp    open  http
631/tcp   open  lpp
8888/tcp  open  sun-answerbook
```

Nmap run completed -- 1 IP address (1 host up) scanned

# Choice: Bliss or Burden?

- New users are overwhelmed by breadth of choice
- Fail-safe configuration for newbies
  - KDE
  - Mozilla Web Browser & Email Client
  - OpenOffice.org
- Special needs not compromised
  - Nostalgics: “I’ll die with TWM on my screen”
  - Geeks: “I compiled GNOME from source and it loads in 1,2 seconds”
  - Old hardware: “Mozilla takes 3 minutes to load with 8MB of RAM on my 100MHz box”

# Final Notes

- 3GB on disk for OS + all of the above
- “Registry clutter” not an issue
- Installing/uninstalling one application does not affect the other
- Installing/uninstalling applications certainly doesn't affect the Operating System (!)
- Why do M\$-IE and M\$-Office start up so fast?
- "He who gives up functionality for ease of use loses both and deserves neither." (Anonymous)