

***Organic Food,  
Organic Software***



# Program

- Introductions
- Section 1 – about this talk
- Section 2 – about software
- Section 3 – about hardware
- Section 4 – about the components
- Section 5 – about VoIP
- Section 6 – about Desktops
- Section 7 – about Transitioning
-

# Organic Food, Organic Software

*Organic Food,*

*Organic Software*

# Introductions

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Erik Guereca

Relys Moreira



Daniel Baroco



Erik Guereca



Relys Moreira

# Section 1

- About this talk
- What are we trying to show
- What we use
- Our experience
- Just do it
- Why we did it
- Why Open Source

# About this talk

This is just an example of Open Source used in a business. From the end user point of view.

- When it comes to software and business, it's all about the business, not about the software.
    - (but we will be talking about the software, nonetheless)
    - When you replace software, you just replace the software. Not the needs.
      - (the hardware, the personnel, the process, etc)
- Don't be confused with the word “FREE”

# What are we trying to show?

That it worked for us.

-----  
That the myth of “not possible”, or even just  
“extremely difficult”  
is just that – a myth.

-----  
That it might work for you too.

---  
We got the idea from attending SCALE talks!

---  
Disclaimers:

we will try to keep it generic, and you should know that we do not work for, or get commissions from, or are trying to promote any particular thing or even point of view

# We Use:

[Logo Slide(s) Here]

or at least a mention, and/or a salute to those that made it possible.

The many volunteers, the leaders, and the entire community that is involved in the Open Source world.



# Open Source for the Rest of Us . . .

Our experience of how

a SMB

(50 Million Manufacturing company with 300 employees)

goes Open Source, stress-free,

including Ubuntu desktops . . .

in less time than it took MS to release Vista™

# Just do it!

## Chronicles of an Open Source Migration

How we went from a “Windows Shop”  
to an Open Source shop

**- It's easier than you think!**

# Quick Preview

- Why we did it
  - -started for the “wrong reasons” -free as in beer
- Why Open Source
  - Free as in freedom
  - A word on FSF, GNU, Linux kernel, Gnome, Debian, Ubuntu,
  - RMS, Linus, Mark Shuttleworth, Miguel de Icaza, etc., etc. . .
- Goal
- Hardware
- Software
- Plan of action
- Recap

# Section 2

- About software in general
  - Background Basic assumptions
  - Quote on computerizing mess
  - On choosing tools
  - Having a plan
  - On TCO
    - Quote on TCO
    - Goal or Spin ?

# Background basic assumptions

- Software is a tool
- When we say a “software solution”, we mean finding a way to do something that uses software as a tool.
- The solution part of it is when you tell your employees you are going to use a spreadsheet instead of a calculator, or a pencil, to add up these figures.
- The adding up the figures is what you want to accomplish, the brand of the software is about as relevant as the brand of the calculator.
- Even calculators have different features, but if I need to program interactive heliox decompression tables in a calculator, I need the features, I don't if I just need to add a grocery list.



# Quote

## Quote on computerizing Mess

Let's rewind the clock a bit. I have a book on my desk, which I recite a short passage out of every time management wants us to computerize a mess. The book is "Businessman's Guide To Microcomputers", by accounting firm Deloitte Haskins and Sells - published November 1982.

A short excerpt from chapter 14, "Common first time buyer pitfalls"

We've got a lot of problems, but we're getting a computer

The buyer is asking for trouble...there is a new "old adage": "Don't computerise a mess...clean it up first". It is important to understand that a computer can't help you do things you don't understand, and it won't make decisions for you. All it does is process a lot of information very quickly...exactly as it is told to do it. To be of any real use, a computer requires a disciplined approach and an organised mind.

If you're going "You must be kidding" frequently, you're just computerising a mess. Management needs to be prepared to re-engineer the business, not just throw overpriced software and multiple cores at it and hope it sticks.

quote from slashdot post reference below:

<http://news.slashdot.org/article.pl?sid=07/10/07/1638226>

# On choosing tools:

- The best tool for the job
  - (Price, Quality, Availability)
- Flexibility, Choice, Timing
  - Where you are in control, not the software company
- Use of resources
  - Money, memory, cpu, training, etc.
  - Time; (including that spent in constant cleanups of spyware, malware, virus, adware, etc.)



# Having a Plan

- The long term plan determines direction
- How to get there
  - The “uncluttered”, constant improvement approach.
    - Kaizen, 6- $\sigma$ , 5s, Lean, etc
    - Continuous improvement, Decision cycle, total quality, high-performance, etc.
- Where you want to end up
  - Freedom from lock-in, freedom from administration burden, freedom from initial cost, freedom to improve as needed, to collaborate, etc
    - Open Source



# Another Quote

. . . Hansen emphasized that studies have shown that the Windows platform often costs the same as or less than Linux when the total cost of ownership is considered.

"Further, when the full range of user benefits are taken into account, such as the wide range of applications available, familiarity, and ease-of-use, Windows is often a much better overall value," he said.

The IDG News Service is a Network World affiliate.

Microsoft denies paying contractor to abandon Linux  
By Remmy Nweke , IDG News Service , 11/11/2008

[http://www.networkworld.com/news/2008/111108-microsoft-denies-paying-contractor-to.html?Inform=nl&nlhtos=rn\\_111208&nladname=111208linux](http://www.networkworld.com/news/2008/111108-microsoft-denies-paying-contractor-to.html?Inform=nl&nlhtos=rn_111208&nladname=111208linux)

# Goal or spin?

What do you want to achieve?

Reduce TCO (Total Cost of Ownership)

Cost Item	Cost Issue	Proprietary Software	Open Source Software
License	pay for, or really “rent” the software	Pay	FREE
Administration	keep track of licenses, costs, etc	Pay	FREE
Purchase	Purchasing, PO's, budget meetings, ROI, etc	Pay	FREE
Deployment	load, test, train, etc. - the main event	Same	Same
Usage	user efficiency, etc here is where the tool either does the job or it doesn't. (and you should already know that way before you get here)	Same	Same
Freedom from lock-in	“live free or die” - independence of (freedom from) vendor dictated migrations.	Not free	FREE
		<b>\$\$\$\$</b>	<b>FREE !</b>

This is just the cost. A straight forward, side by side comparison of cost elements. In addition consider what you can do with the software when it's GPL'd as opposed to what you are allowed to do with it by the software company in the case of proprietary software. Modify to suit your needs? Quickly deploy on an extra 10, or 100 workstations?

Examine the code, incorporate that with another app? Etc, Etc, Etc. . .

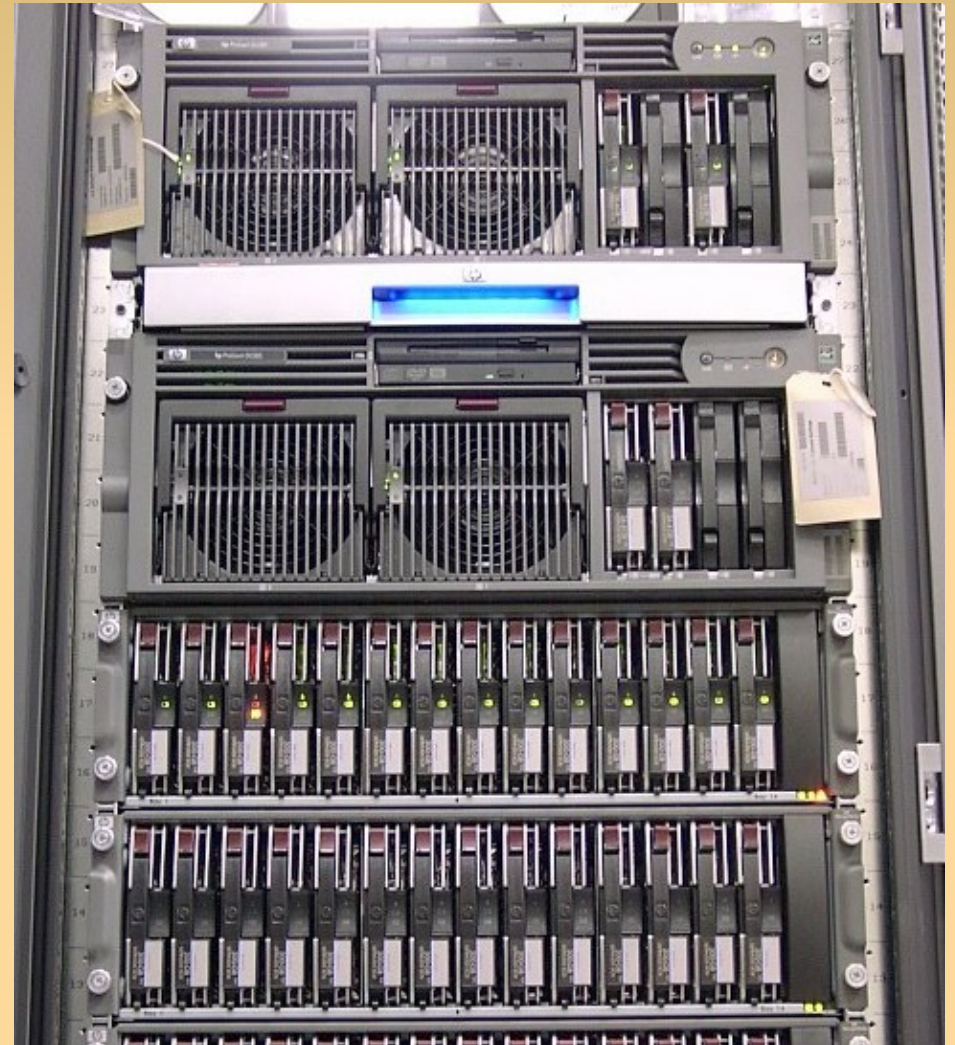
We have taken for granted that it can be dictated to the user, how, when and who can use it and when, and we pay extra for all this inconvenience?

# Section 3

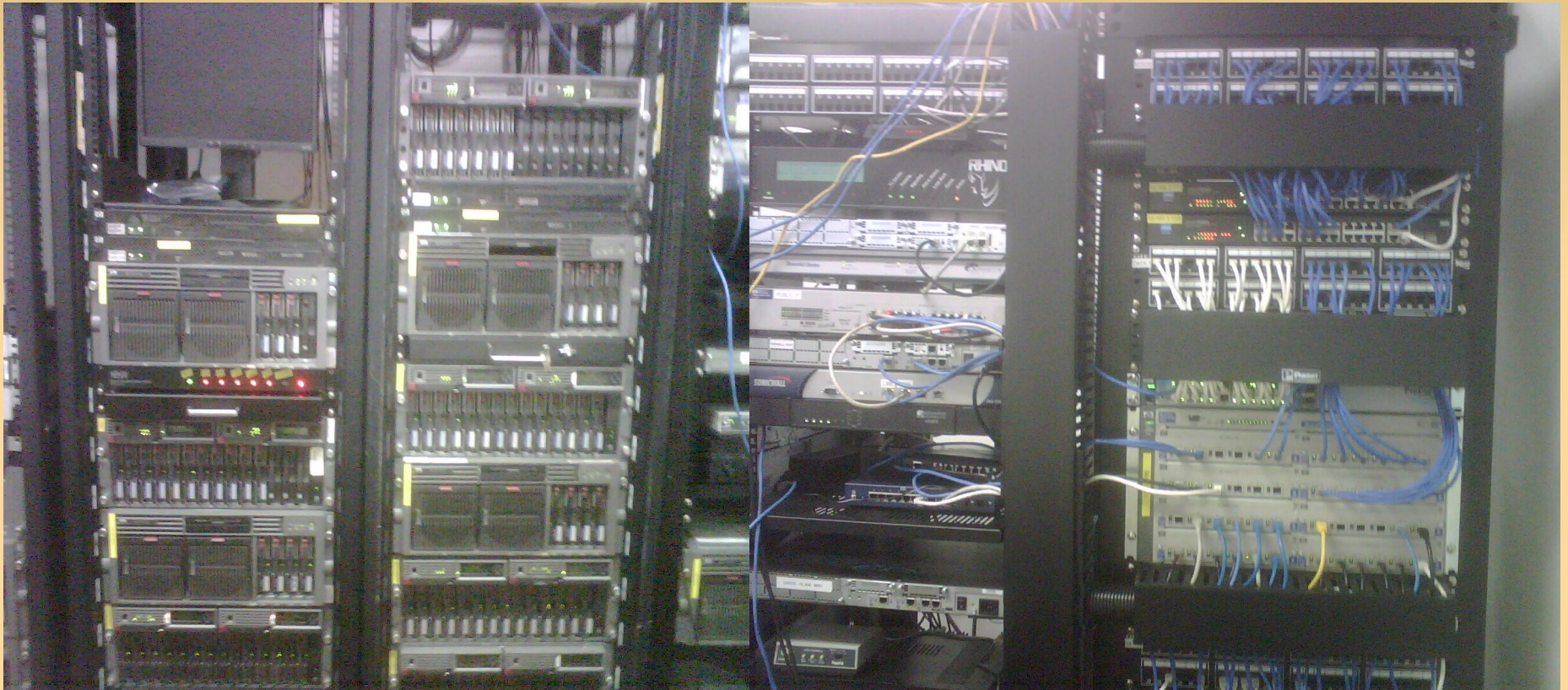
- Hardware
- A word on hardware
- Server Room
- What we did
- It worked!

# A word on hardware

- Hardware compatibility list
- Sources
  - Our Case
    - Vendors, VAR's
    - Ebay
    - Multi-location issues (such as servers x 3)
- From one to many
  - Services



# Server Room



# What we did (*hardware-wise*)



- Standard platform
  - (like std fleet, less parts, less training, less confusion, less space, more flexibility, etc)
- DL585, MSA500, + DL145, dx2xxx, tcxxxxx
  - 2 to 16 way Opteron, with 2 to 256GB RAM!
  - Redundant
    - Power Supplies, Controllers, fans, hard drives
  - Hot plug
    - Power Supplies, Controllers, fans, hard drives
  - Battery-backed write cache, RAID 10, etc, etc. . .

# It worked!

- We have used Mandriva™, Red Hat™, Suse™, Ubuntu™, Centos™, FreeBSD™, and OpenBSD™
- Over time, we bought desktops from **hp**™ with Mandriva™, Free-DOS, and Windows™
- Servers, desktops and, laptops all worked with minimal effort, time, or expense. Used ones as well as new ones.
- We replaced *pentium*™ I, II and III machines with Win95, 98 or 2k, with AMD64 Linux, as needed. - no special project needed.

# Section 4

- The main components
- The ERP
- OS
- Authentication, Files
- E-Mail
- Network monitoring
- Other services



# ERP - “The System”

- The Key ingredient to a successful migration
  - The needs – invoices, transactions, etc
  - Locations
  - To cluster or not to cluster
- Dividing the users by functional groups
  - “Natural Grouping” - Department or ERP modules
  - Software needs are similar by group
- Migration by group
  - Our case

# OpenMFG

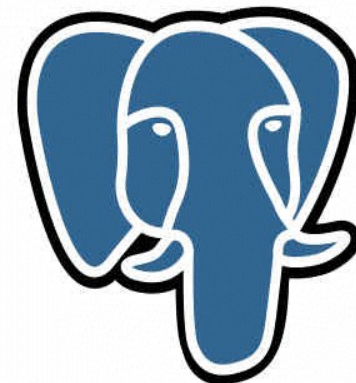
- Full-fledged ERP
- Cross Platform
- Runs on pgSQL

They even have a version you can download from sourceforge! - PostBooks

- For us, this is what started it all.



PostgreSQL



# Software

- OS “The Platform” (and the importance of cross-platform)
  - Mix and match?
  - Interoperability issues, security issues
- Services
  - Database -ERP
  - Database -Other
  - E-Mail, web-mail, blackberries, calendars, etc.
  - File Server, Fax server, etc.
  - CRM, Document Management (if not in ERP)
  - Authentication (AD DC to LDAP)

# OpenLDAP + Samba Domain Controller on Ubuntu Server

- Ubuntu Client Authentication
- File Shares Authentication
- Windows Authentication (pGina)



# OpenLDAP

- phpLDAPadmin for administration
- Ubuntu client authentication
- Address book
- Windows authentication (pGina)
- Master and Slave Servers
- Authentication on multi-locations

# OpenLDAP & Samba Integration

- Single level for users and computers administration
- Single Login accounts

# Stand Alone Samba Server

- File shares
- Privilege shares
- Access from multi-locations
- User name and password added manually

# For e-mail: Qmailrocks on FreeBSD



Qmailrocks.org  
A Qmail Installation ~~Guide~~ Discussion Forum

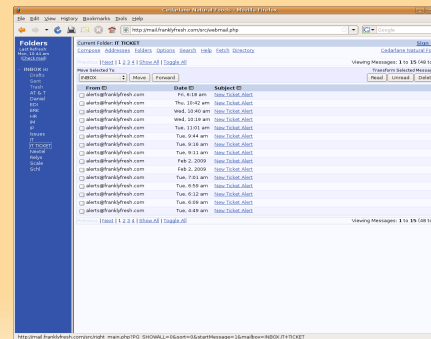
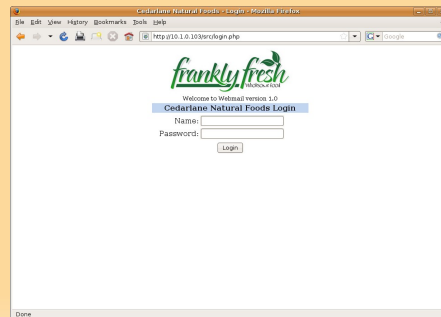
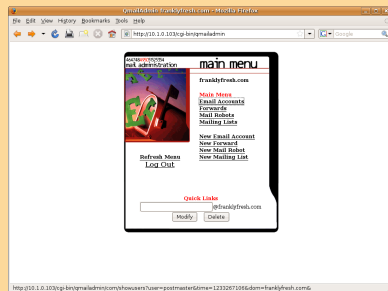
+ =



qmailrocks.org  
a qmail installation guide since 2003



Courier  
IMAP



Evolution



# Qmail

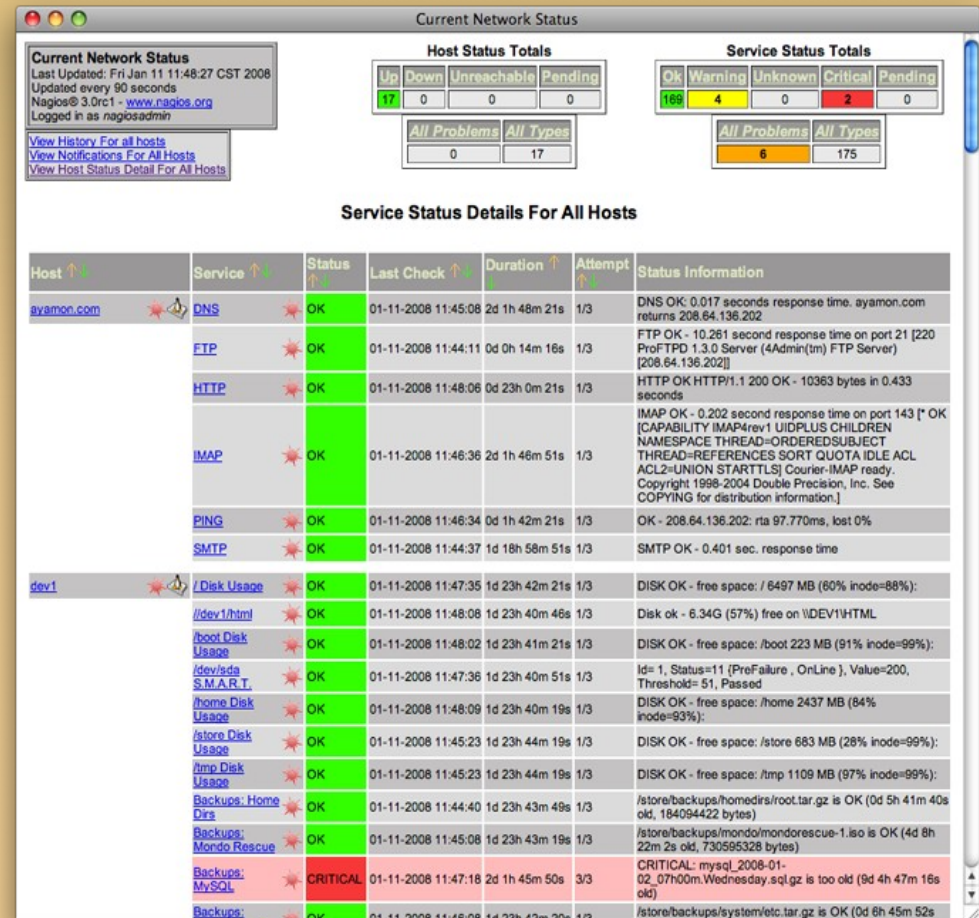
- Qmail from *qmailrocks.org* comprehensive qmail installation resource
- Fully functional qmail server with all sorts of extra software
- Clam Antivirus, Spam Assassin, Qmail-scanner, Courier-IMAP, analysis logs, etc.
- Easy GUI Administration
- Stable Mail Server on FreeBSD
- Web mail with LDAP integration

# Email Clients

- Ubuntu (Evolution)
- Windows (Mozilla Thunderbird)
- Both support LDAP Server for Address Book

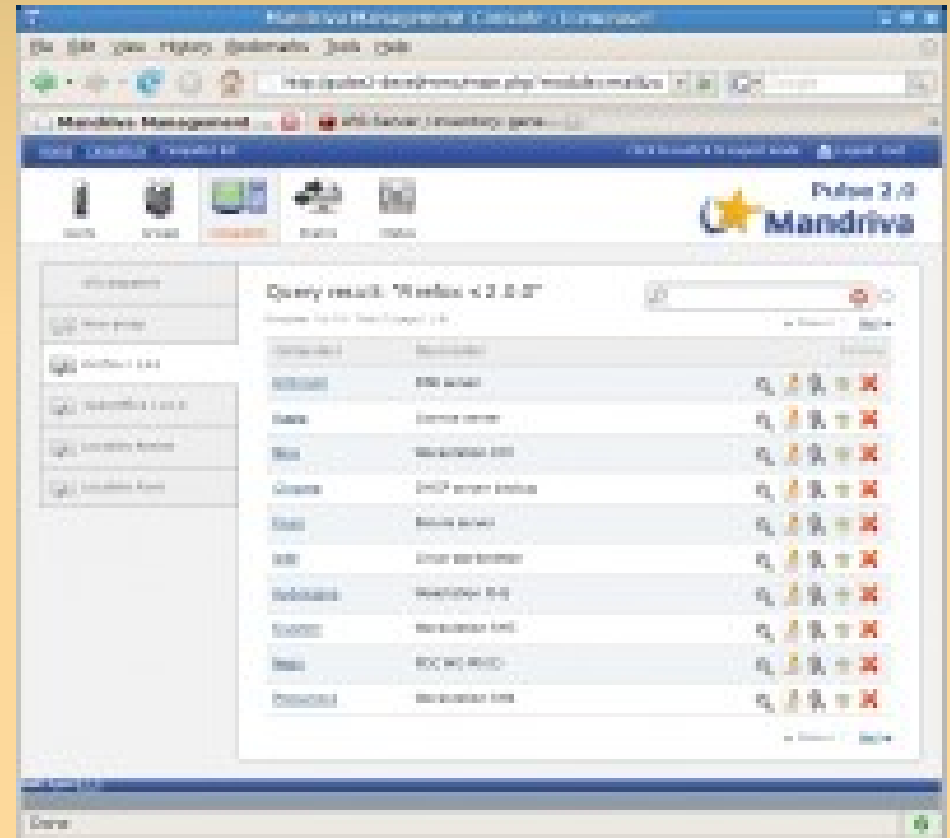
# Network Monitoring: Nagios

- Network Monitoring System



# Mandriva Pulse 2

- Designed for mixed environments
- Mandriva.com
- Can be downloaded at:  
<http://www.mandriva.com/enterprise/en/products/pulse>



# Ubuntu Mirror Server

- Private Mirror of the Ubuntu Software
- Implemented to:
- Accelerate Ubuntu Installations
- Quick upgrades and package downloads
- Avoid consuming Internet bandwidth

# (DRP) Disaster Recovery Planning

- Daily Night Backups
- Backups executed by shell scripting (cron jobs)
- rsync
- rsync remote file partitions synchronization
- Multi-location File servers
- Slony postgresSQL

# VPN Server

- Vpn Server on CentOS
- Point to Point Protocol (PPTP)
- Supports Windows 95/98/NT/2000/XP/Vista
- Linux/Unix PPTP client (Our case Ubuntu)

# Other Services: DNS, DHCP, Web

- DHCP
  - DHCP Service (dhcp3-server) running on Ubuntu Server.
- DNS
  - Bind9 on:
    - Ubuntu Server, CentOS, OpenBSD, FreeBSD
- Web Hosting
  - FreeBSD, Apache, PHP MySQL



# Section 5

VoIP

# Oh Yeah, and VoIP

- Asterisk
- Land lines
- Desk phones
- FAX
- WiFi VoIP
- Extras



# Section 6

Desktops

# And now the desktops


- Collaboration
  - Outside companies,
  - internal employees
- Office Suite
- “Special” software
  - For diagrams, flowcharts, Gantt charts, etc
  - Labels, Barcode, graphics, etc.
  - CAD
  - Accessories and Others



# Some statistics

- How long? Desktops: eval since 2005, deploy since 6.04LTS (early 2006) 10, now 60
- How long VoIP: since Feb 2006
- How long Qmail: since 2007
- How Long ERP: Eval. 2004, live Since 2005
- How many invoices: now <1,000 week due to consolidation, (from up to 5,000/wk)
- How many users email: 110, network: 110, actual desktop: 60+8
- Servers: 18 (list)

# Desktop Operating Systems

- We are using  **ubuntu**
- We started with version 5.04/5.10
- We are now using mostly 8.04 LTS
- We use some 8.10
- Works with standard, off-the-shelf IT hardware on desktop and servers
- Works with notebooks, netbooks, the XO, etc.
- (We also use other OS's in the server room)

# Security, etc.

- Regardless of operating system: Proper network security a must anyway; gateway, good passwords, etc.
- Disaster recovery plan, backups, etc.
- Anti-virus, Spybots, spyware, malware, spam
- User rights, logins, etc
- IP tables, pfSense, others

# Linux/Windows Interoperability

- It's there!
- You need it
- You specially need it during the transition
- Samba (in another slide) Open-Office and other cross platform software like Mozilla's
- Many components don't care
- Many can just co-exist side by side
- Managing the transition (on another slide)



# Command line ?

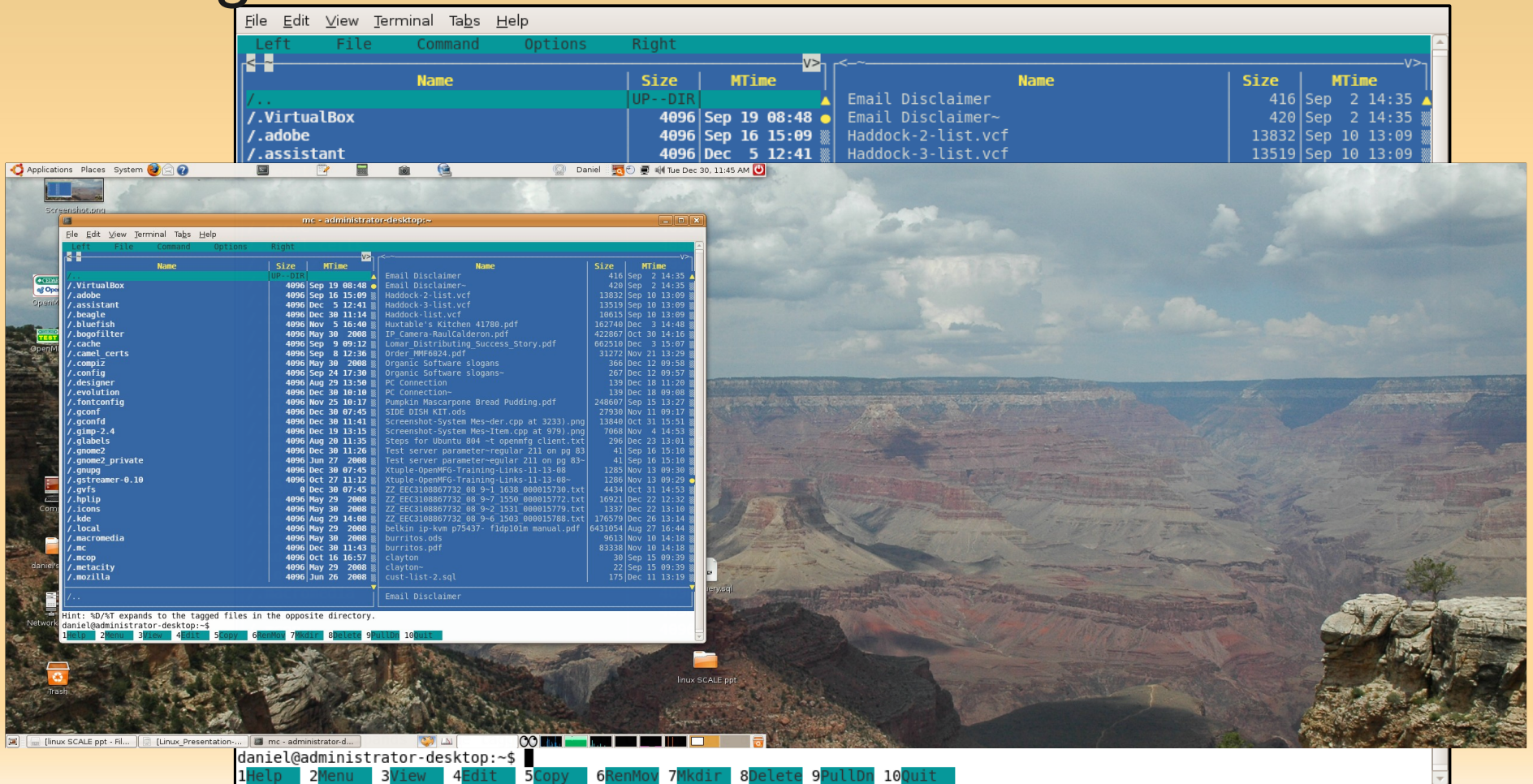
- Most GUI types (like me) want to know:
  - Will I have to use the CLI?
    - A little
  - Is it back to the DOS green screen days?
    - Short answer NO.

```
bash-2.05b$ pwd
/home/dstone
bash-2.05b$ cd /usr/portage/app-shells/bash
bash-2.05b$ ls -al
total 68
drwxr-xr-x  3 root root  4096 May 14 12:05 .
drwxr-xr-x 26 root root  4096 May 17 02:36 ..
-rw-r--r--  1 root root 13710 May  3 22:35 ChangeLog
-rw-r--r--  1 root root  2924 May 14 12:05 Manifest
-rw-r--r--  1 root root  3720 May 14 12:05 bash-2.05b-r11.ebuild
-rw-r--r--  1 root root  3516 May  2 20:05 bash-2.05b-r9.ebuild
-rw-r--r--  1 root root  5083 May  3 22:35 bash-3.0-r11.ebuild
-rw-r--r--  1 root root  4038 May 14 12:05 bash-3.0-r7.ebuild
-rw-r--r--  1 root root  3931 May 14 12:05 bash-3.0-r8.ebuild
-rw-r--r--  1 root root  4267 Mar 29 21:11 bash-3.0-r9.ebuild
drwxr-xr-x  2 root root  4096 May  3 22:35 files
-rw-r--r--  1 root root  164 Dec 29  2003 metadata.xml
bash-2.05b$ cat metadata.xml
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE pkgmetadata SYSTEM "http://www.gentoo.org/dtd/metadata.dtd">
<pkgmetadata>
<herd>base-system</herd>
</pkgmetadata>
bash-2.05b$ sudo /etc/init.d/bluetooth status
Password:
* status: stopped
bash-2.05b$ ping -q -c1 en.wikipedia.org
PING rr.chtpa.wikimedia.org (207.142.131.247) 56(84) bytes of data.

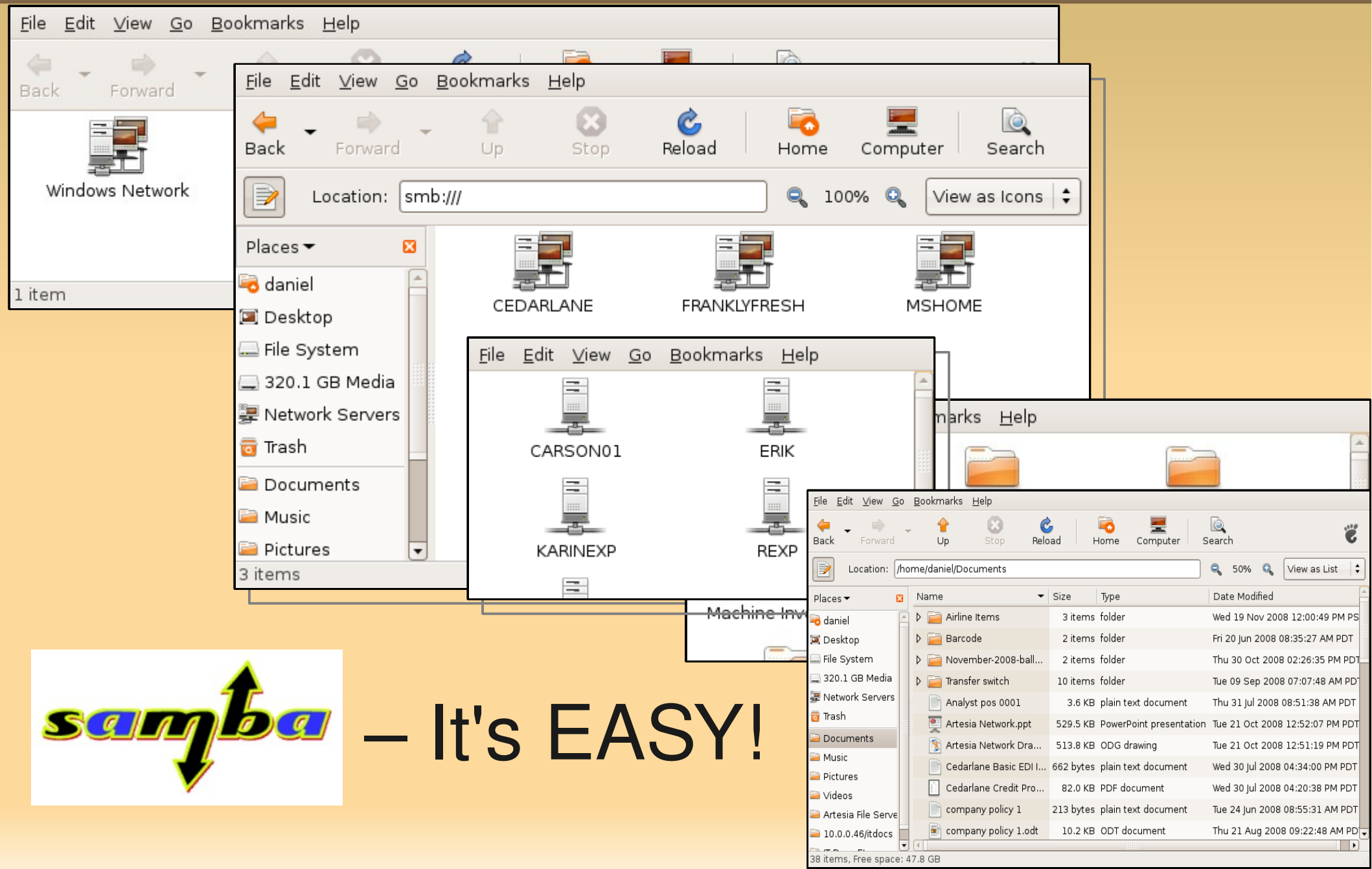
--- rr.chtpa.wikimedia.org ping statistics ---
1 packets transmitted, 1 received, 0% packet loss, time 0ms
rtt min/avg/max/mdev = 112.076/112.076/112.076/0.000 ms
bash-2.05b$ grep -i /dev/sda /etc/fstab | cut --fields=-3
/dev/sda1      /mnt/usbkey
/dev/sda2      /mnt/ipod
bash-2.05b$ date
Wed May 25 11:36:56 PDT 2005
bash-2.05b$ lsmod
Module                Size  Used by
joydev                 8256  0
ipu2200               175112  0
ieee80211              44228  1 ipu2200
ieee80211_crypt        4872  2 ipu2200,ieee80211
e1000                  84468  0
bash-2.05b$ █
```

# Linux Shells

- Like command.com, cmd.exe in DOS/Windows
- Like bash, many many to chose
- Midnight Commander



# Samba / Windows Sharing



– It's EASY!

# SAMBA (from a windows client)

The screenshot shows a Windows XP desktop environment. The desktop background is blue with various icons including 'My Documents', 'Adobe Reader 8', 'Ad-Aware SE Personal', '7z464.exe', 'WinZip', 'Desktop Other', 'New Folder', and 'Microsoft Word'. The taskbar at the bottom shows the Start button and several open applications, including 'File Explorer'. The File Explorer window is titled 'File Explorer' and shows a network location. The address bar contains 'File Explorer'. The left pane shows a tree view of folders, including 'Microsoft Terminal Services', 'Microsoft Windows Network', 'Cedarlane', and 'Mshome'. The right pane shows a list of objects with columns for 'Name' and 'Comments'. A red watermark is overlaid on the image, reading '(smudged a little to preserve privacy)'. The system tray at the bottom right shows the time as 9:24 AM.

Name	Comments
Am...-212 (HP Workstation 2GB Ubuntu 7.10) (Am...-212)	Am...-212 (HP W...
am... server (Data File System) (Am...)	am... server (...)
fl... (HP AMD64 2GB Ubuntu 7.10) (Fl...)	fl... (HP AMD64...
J...-168 (HP Workstation 1GB Ubuntu 7.10) (J...)	J...-168 (HP...
M...-132 (HP Workstation 2GB Ubuntu 7.10) (M...)	M...-132 (HP...
M...-127 (HP Workstation 2GB Ubuntu 7.10) (M...)	M...-127 (HP \...
Q...-209 (HP Pentium 4 1GB Ubuntu 7.04) (Q...)	Q...-209 (HP Penl...
Q...-235 (HP Pentium 4 1GB Ubuntu 7.04) (Q...)	Q...-235 (HP Penl...
R...-229 (HP Pentium 4 1GB Ubuntu 7.10) (R...)	R...-229 (HP P...
R...-114 (HP Workstation 1GB Ubuntu 7.10) (R...)	R...-114 (HP W...
S...	

# Open Source Productivity Applications

- OpenOffice.org,
- Draw - for labels, diagrams, etc
- Gimp – for pictures, photos, etc
- Planner , Dia
- Q-CAD
- g-labels, k-barcode
- GnuCash
- Etc, Etc. . . .

# Section 7

Transitioning,  
wrap-up

# Transitioning from Windows

- Cross-platform applications is the key
- Outlook/Exchange to QMail/Evolution in 3 steps
  - Dual e-mail systems
  - Thunderbird, dual imap accounts, copy folder
  - Simple, one user at a time.
- What about the calendars?
- What about the blackberries?
- What about them?

# You can do it

- Just Plan
- Learn / train
- Address change resistance / manage change
- Execute
- Enjoy the benefits



# In Closing

- It's been fun, if challenging and busy at times
- It is perfectly “do-able”
- After 3 years we still don't regret it
- Free is good!
- (in every sense, but in the sense that matters most – freedom, is just good.)

Questions?

Comments?

# The End

Thank You!

Contact info: Use [GuerecaSystems.com](http://GuerecaSystems.com)