

Why Won't Johnny Run Linux?

Scale 4x

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Desktop Linux is healthier than ever

- Distros are more polished than ever
- OpenOffice 2 works well
- CDs close'n'play
- Large migrations (e.g. Munich, IBM) underway
- 1 in 3 companies use open source on desktop

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But ... market share still tiny! Why?

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Problems with

- Commercial Applications
- Microsoft Integration
- Drivers/Codecs
- Laptops
- User experience

Problems with Commercial Apps

- Hard to build universal apps
- Commercial applications hard to manage
- Key applications missing

Hard to build universal apps

Compiling an app that can run anywhere is hard

- Qt3? 4? Gtk1? 2? Fltk? WxWidgets? XUL?
- glibc-2.2? 2.3.2? 2.3.3? 2.4?
- gcc-2.95? 3.3? 3.4? 4.0? 4.1?
- RPM? DEB? TGZ? Klik? Autopackage?

Even adding items to system menu is a challenge

LSB some relief, but no (or little) sound support yet

Commercial Apps hard to manage

There is no package format accepted by all distros
so commercial apps all tend to use ad-hoc installers

Thus:

- No uniform installer
- No uniform uninstaller, either
- No unified updater

-> hard to manage, security risk

e.g. RealPlayer's installation notes say

- `chmod +x RealPlayer10GOLD.bin`
- `./RealPlayer10GOLD.bin`

Requires manual editing of `.bashrc`, menus!

Key applications missing

People want Photoshop!

Gimp's not (yet) a sufficient substitute:

- Unfamiliar UI
- Can't do CMYK images
- Can't do 64 bit per pixel images
- Can't run third-party Photoshop plugins

Photoshop has a real plugin ecosystem

Other apps (e.g. Paint Shop Pro) accept Photoshop plugins

Key applications missing (cont'd)

Believe it or not, in the corporate world, "email" means "email and shared calendar"

And Linux doesn't currently have good shared calendaring

Sunbird shared calendar setup is daunting

Key applications missing (cont'd)

Most Windows applications in the world are probably custom-written in MS Visual Basic or MS Access for a small number of users

These are key applications for those users

A lot of work went into those apps

Little incentive to rewrite them for Linux

Problems with Microsoft Integration

- Can't run many Windows apps
- Single Signon
- Accessing File Shares

Can't run many Windows apps

Wine can run some Windows apps ok:

- Microsoft Office 97,2000,2003
- OpenOffice 2.0
- Firefox 1.5

but it has still trouble with

- COM-heavy apps (e.g. many VB apps)
- Database apps (e.g. MS Access)

Any new app probably exposes a few Wine bugs

Cost to fix Wine for a new app \$0 - \$250K

Single Signon

Can't log in using Windows username/password

Or maybe you can, but it requires a PhD in Sambaology

There's a nice recipe at weblog.bignerdranch.com, but it's about 20 steps long, many of which have you edit config files with vi.

The OS/X instructions there are about half as long, and involve no manual editing of config files

Accessing File Shares

Latest Gnome and KDE now have SMB browsers
Apps can use remote shares via special Gnome/KDE APIs

Desktop-agnostic apps can't use Gnome/KDE APIs,
have to use the kernel support

Linux kernel can mount some shares
but not with proper per-user semantics

Problems with drivers/codecs

- Video and audio codecs a hurdle
- Driver support for new hardware
- Printer support

Video and audio codecs a hurdle

Most formats (e.g. mpeg, mp3, dvd) patented

Free implementations exist, but using them without a license violates the patents

This is one place proprietary software vendors can help!

RealPlayer comes with license to play mpeg

Driver support for new hardware

Price pressure forces PC vendors to use cheap, buggy chips with no doc, and work around the bugs with hacks in the drivers

Then six months later they switch to new chips, also buggy and with no doc

When customers start demanding preloaded Linux, vendors will solve this

OSDL and kernel community working on NDA doc library

Printer support

CUPS - print spooler

Foomatic - format converter

Gutenprint - drivers

PPD - printer description file

Nobody actually understands it all

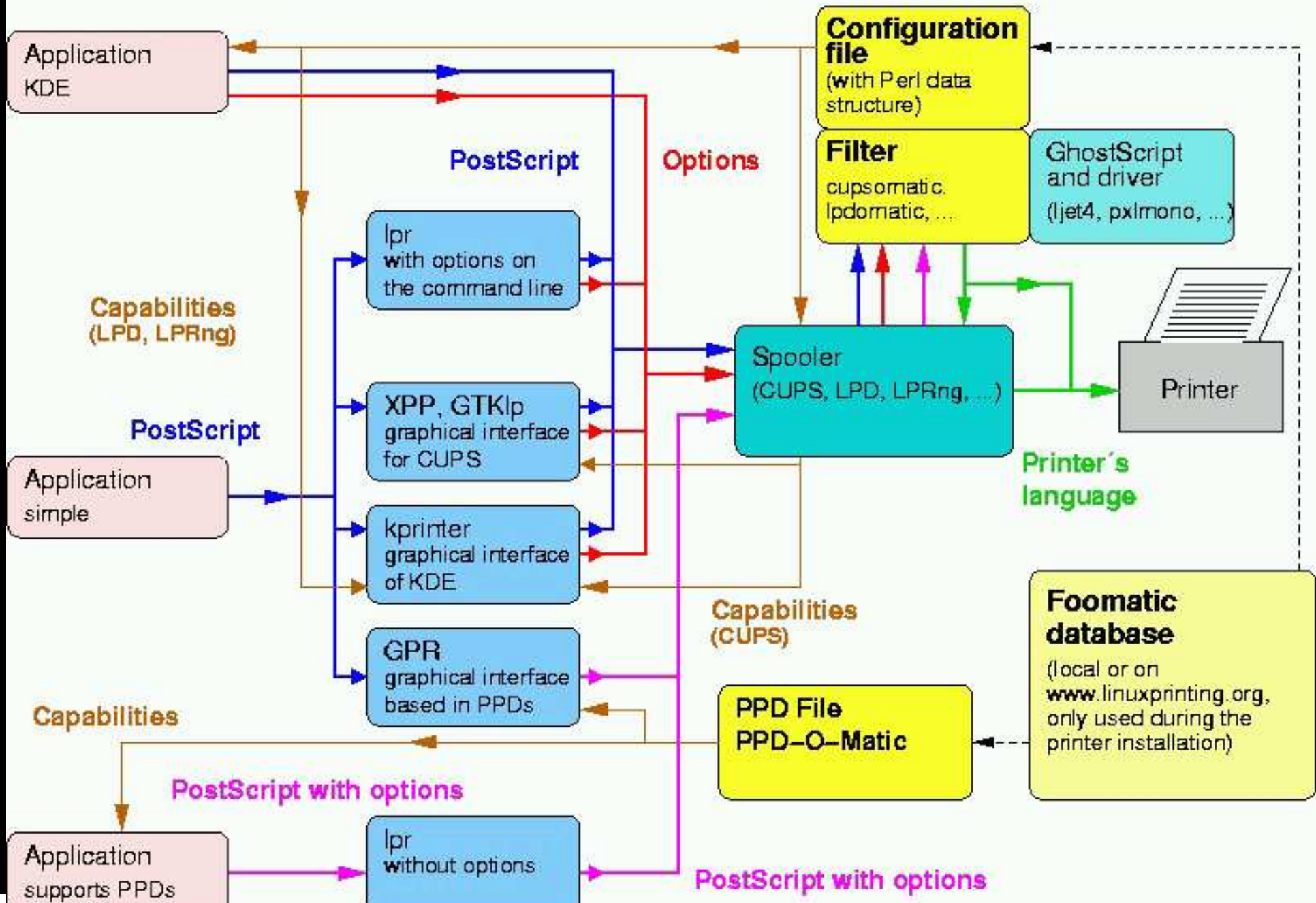
"the gutenprint UI code is an impenetrable mess"

"Foomatic is the document format converter from hell"

Must be hard, 'cause current distros
don't work with my HP Deskjet 970

How Printing Works on Linux

Data Flow when Printing with Foomatic



Problems with Laptops

Laptops pose new challenges:

- Wireless drivers mess
- Switch between network interfaces
- Suspend
- Power Consumption

Wireless drivers on Linux are an unholy mess

Only recently is there a maintainer for the Linux wireless stack

His first job is to figure out what to do about all the competing Linux wireless stacks!

Until we have a unified wireless driver stack, hard for IHVs to write and support drivers

Switch between network interfaces

Current distros all assume network there when booting
Plugging in after boot means reboot or wizardry

"Network Manager" will make this pain go away
Automatically notices when you plug in cable
Discovers new wireless gateways

Suspend

Users just close their laptop to put it to sleep and expect it to wake up quickly when opened

This does not work well on Linux yet

There are always two competing Software Suspend systems in Linux, always just about to be merged

Power Management

Linux does not currently throttle CPU, backlight on demand

This means battery life isn't what it could be

This is an issue for handsets, too

Problems with user experience

- Slow Startup
- Needs Lots of RAM
- Fonts
- Accessibility
- Usability

Slow Startup of Key Apps: System

Fedora Core 3 boot time: 98 seconds

Ubuntu 05.10 boot time: 160 seconds

(if disk check forced & not plugged in to LAN)

Bootchart is your friend

Slow Startup of Key Apps: KDE / Gnome

LWM startup time: 1 second

KDE cold-cache startup time: ~30 seconds

Gnome cold-cache startup time: ~30 seconds

Slow Startup of Key Apps: OpenOffice

OpenOffice 2.0 startup time:

- 96 MB RAM: 28 seconds
- 256 MB RAM: 12 seconds

MS Word 97 startup time:

- 64 MB RAM: 3 seconds

Current work:

- wiki.services.openoffice.org/wiki/Performance

Needs Lots of RAM

New Linux systems at Fry's & Walmart only 96MB
but Fedora Core and OpenOffice want 256MB!

RULE project good, but only addresses installer

Distros should enforce minimum system requirements and work to
reduce them

Fonts

Users expect documents to look same as on Windows
-> we need MS-equivalent fonts (Arial, Times32, etc)
Bitstream Vera nice but not enough

Asian fonts still a big issue

Accessibility

Massachusetts ran into flak because
OpenOffice didn't support blind users
well on Windows

Lesson: we ignore accessibility at our peril

Peter Korn's blog shows Sun is now focused on it

Why Won't Johnny Run Linux?

Will this be the year of Desktop Linux?

For some users, it already is!

It all depends on what that desktop has to do

Ten Warning Signs of the Year of Desktop Linux

1. OpenOffice Bundled on Most PCs
2. Closing a laptop suspends it properly
3. DVDs and web films work well out-of-the-box
4. Wireless works well out-of-the-box
5. Wine Supports Database and VB Apps
6. Active Directory Login Just Works
7. A US State Actually Deploys OpenDocument
8. IBM finishes switch to Linux Desktop
9. New HP Deskjets Just Work
10. Desktop LSB covers Menu, Sound, Video APIs

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Questions

Slides online at

<http://kegel.com/linux/scale4>

More info at

<http://kegel.com/linux/comfort>

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