



Introduction to Linux for RISC OS Users

Matthew Cook
<http://escarpment.net/>

Introduction

I've been using Linux for over three years, during my time working for Loughborough University and the Janet Web Cache Service.

I've used RedHat, SuSE, Caldera and various appliance distributions.

Introduction to Linux for RISC OS Users

Part I
Introduction to Linux

Linux Introduction

- History
- Tux
- Distributions
- Hardware Issues
- Software Issues
- Security Issues
- Specialist Distributions
- Why Linux?

History

What is Linux?

- Free (GPL Licensed)
- Multi user Operating System
- Not Unix
- OS supporting 32bit and 64bit hardware
- Bases on POSIX and UNIX API's

* GNU – GNU's Not Unix

* GPL – General Public License

History...

- In 1991 Linus Benedict Torvalds started the Linux Revolution.
- 2nd Year Computer Science student of the University of Helsinki.
- Minix written by Andrew Tanenbaum was not good enough.
- Linux 0.01 was released mid September 91

History...

- First versions very basic
- Only supported AT Hard Disc
- Single user systems

- After several years and development from many members of the GNU project, commercial vendors took interest and created distributions like we see today

History 1991-2002

- September 1991
Linux 0.01 released
- April 1992
First Linux newsgroup comp.os.linux created
- October 1992
SLS the first standalone Linux Install at 10Mb
- June 1993
Slackware released
- August 1993
First book about Linux "Linux Installation and Getting started" was released

History 1991-2002...

- March 1994
First Issue of Linux Journal is published and Linux 1.0 is released.
- June 1994
Linux ported to DEC 64-bit Alpha
- September 1994
Wired runs a story on Linux
- April 1995
Linux Expo launches
- January 1997
First Linux virus "Bliss" discovered

History 1991-2002...

- January 1998
Linux weekly news started and RedHat forms
- February 1998
Cobalt Qube released
- May 1998
Google released running on Linux!
- July 1998
KDE Vs Gnome wars start
- September 1998
Microsoft announce they are worried by free software

History 1991-2002...

- January 1999
Samba 2.0 Released
- April 1999
HP announces support for major distros
- September 1999
RedHat stocks reach \$135 doubling in a couple of months
- January 2000
VA Linux announce SourceForge
- March 2000
60% of web servers running Apache

History 1991-2002...

- June 2000
MySQL released under GPL
- July 2000
Star Office released under the GPL
- January 2001
2.4.0 Kernel released January 4th
- May 2001
Sony Playstation Linux kit sells out in 8 mins
- June 2001
Sharp announces Linux based PDA

History 1991-2002...

- July 2001
Slackware 8.0 released
- August 2001
Airsnot software released
- October 2001
Yellow Dog 2.1 released
- December 2001
Evolution 1.0 released
- February 2002
Star Office no longer free

History 1991-2002...

- May 2002
Open Office takes over from Star Office
- June 2002
Wal-Mart sells Lindows PCs
- August 2002
Linux on X-box breakthrough
- September 2002
Mandrake 9.0 Released
- October 2002
Redhat 8.0 Released

Tux?

Why is there a Penguin on Linux Stuff?

- Tux is the Linux mascot
- Tux was chosen by Linus who said "I was looking for something fun and sympathetic to associate with Linux. A slightly fat penguin that sits down after having a had a great meal fits the bill perfectly..."



Distributions

- Redhat Linux v8.0
- Linux Mandrake v9.0
- Corel Linux v3
- Debian/GNU v3
- Slackware v8.1
- SuSE Linux v8.1
- Caldera OpenLinux v3.1.1

Distributions...

RedHat Linux

- Most popular distribution.
- Supports Intel, SPARC and ALPHA.
- Ease of use and large user base.
- Application rich.
- Extensive hardware support.
- Bundles X Windows, Gnome and KDE.
- Comes with Open Office.

Distributions...

Linux Mandrake

- Another popular distribution.
- Very much like RedHat.
- Ease of use.
- More tools than RedHat
- Bundles X Windows, Gnome and KDE.
- Comes with Star Office.

Distributions...

Corel Linux

- Less popular than RedHat
- Usability and ease of install through Install Express
- Comes with only KDE.
- Uses Word Perfect for Linux instead of Sun's Star Office

Distributions...

Debian/GNU

- Intended for the more advanced users.
- More difficult to use and install.
- Used where stability is a prime requirement.
- Provides many web admin scripts.

Distributions...

Slackware

- One of the first distributions.
- Continues to be fairly popular.
- Excellent stability at the expense of less updated code.
- Bundles X Windows, Gnome and KDE.

Distributions...

SuSE Linux

- Popular distribution in Europe.
- Created by German programmers.
- Ease of use and growing user base.
- Very well documented.
- Extensive hardware support.
- Bundles X Windows, Gnome and KDE.
- Vast array of Software.

Distributions...

Caldera OpenLinux

- Business and Power User design.
- Focus on Internet Applications.
- Ease of use and large user base.
- Support for Novell Netware.
- Lots of Networking tools and extensions.

Hardware Issues

Hard Disc Partitioning

- Linux requires one or more dedicated partitions for its exclusive use.
- Dual booting is possible.
- Lilo does not work well with Windows XP, however grub seems to work better!
- Can use of Partition magic to re-size discs.
- Partition drives correctly with swap and /boot as separate mount points!

Hardware Issues...

Hardware

- Check the distribution HCL (Hardware Compatibility List)
- Search the web (Google!)
- Older hardware is better supported.
- Newer hardware is better supported by some distributions than others.
- Win Modems are a non starter!

Hardware Issues...

Drivers

- Linux is not really a PnP OS, at the moment!
- RedHat has Kudzu.
- SuSE has YaST.
- Some hardware vendors are now providing Linux specific drivers.

Software Issues

Command Line

- ls – Lists the directory contents (cat)
- cd – Change directory (dir)
- man – Manual page for a command (help)
- more – Display a file screen at a time
- whereis – Locates a file [Also locate]
- startx – Starts the GUI (desktop)
- shutdown – Shuts the machine down

Software Issues...

- Lilo/Grub – Boot Loader Software
- Office Suites – Open Office or Star Office
- Text Editors – VI, Emacs ...
- Emulators – Dosemu, Xdos and Wine
- X Windows – TWM, Gnome, KDE
- Gaming – Quake 3 and Unreal Tournament

Installation is not as simple as another OS

Security Issues

- Linux is very powerful.
- Source code available to all.
- Lots of running open services.
- Firewall configuration essential.
- Stop unwanted services (chkconfig).
- Subscribe to up2date.

Specialist Distributions

- Smoothwall
- IPCop
- E-Smith
- Lindows
- VMWare

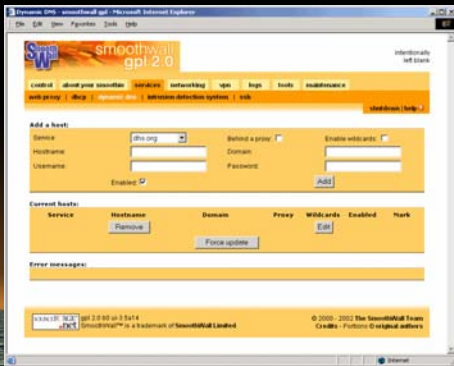
Smoothwall

Smoothwall 0.9.9 (Soon to be v2)

- <http://www.smoothwall.org/>
- Small Linux based home router/firewall
- Routing
- Firewall
- IDS (Intrusion Detection System)
- Web Cache
- VPN (Virtual Private Network) Services

21

Smoothwall...



22

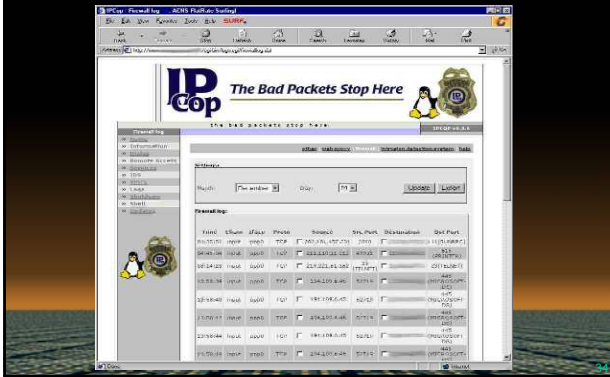
IPCop

IPCop 0.1.1

- <http://ipcop.org/>
- Small Linux based home router/firewall
- Routing
- Firewall
- IDS (Intrusion Detection System)
- Web Cache
- VPN (Virtual Private Network) Services

23

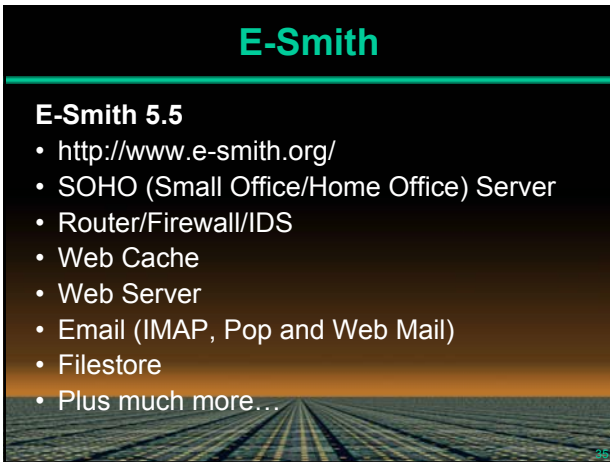
IPCop...



E-Smith

E-Smith 5.5

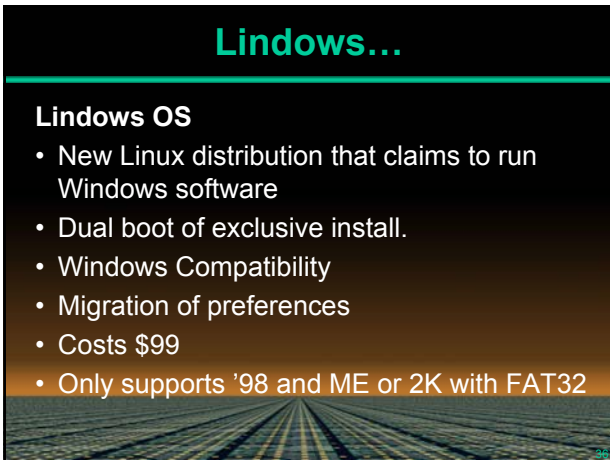
- <http://www.e-smith.org/>
- SOHO (Small Office/Home Office) Server
- Router/Firewall/IDS
- Web Cache
- Web Server
- Email (IMAP, Pop and Web Mail)
- Filestore
- Plus much more...



Lindows...

Lindows OS

- New Linux distribution that claims to run Windows software
- Dual boot of exclusive install.
- Windows Compatibility
- Migration of preferences
- Costs \$99
- Only supports '98 and ME or 2K with FAT32

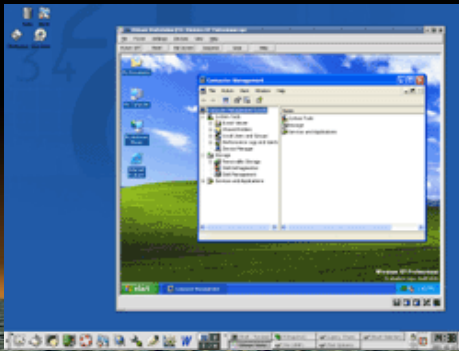


VMWare

VMWare 3.2

- A Virtual Machines for Win32 or Linux hosts.
- Supports many operating systems.
- Allows easy testing environments to be created with swift image re-creation.
- Run Linux on your machine without re-partitioning
- Expensive at \$299

VMWare...



Further Reading

- An introduction to Linux Sys Admin
http://www.infocom.cqu.edu.au/Units/aut99/85321/Resources/Print_Resources/Textbook
- Linux Documentation Project
<http://www.tldp.org/>
- Learning Redhat Linux 2nd Ed
<http://www.oreilly.com/catalog/redhat2/>
- Running Linux 4th Ed
<http://www.oreilly.com/catalog/runux4/>

Why Linux?

- Linux is an affordable alternative to Unix.
- Access to Unix software.
- Better memory management.
- It is not Windows!
- Stable and more secure operating system.
- Massive development effort...

- A chance to experiment!

Questions

Introduction to Linux for RISC OS Users

Part II
Linux and RISC OS

Linux and RISC OS

- Home Networking
- Linux on the ARM Platform
- Command Line access (Telnet/SSH)
- File Sharing (FTP/NFS/Samba)
- Desktop access (VNC)
- RISC OS under Linux

Home Networking

- Configuration similar to networking a Windows PC and RISC OS machine.
- Uses TCP/IP.
- Connect the two machines via a hub, cross over cable or thin ethernet.
- Uses standard diagnostic tools like ping.
- Configuration from ifconfig -a

Linux on the ARM Platform

ARMLinux

- <http://www.arm.linux.org.uk/>
- Maintained by Russell King.
- Supports, RiscPC, A5000 and Archimedes.
- Only RiscPC distribution maintained.
- Certainly not for the faint hearted!

Linux on the ARM Platform...

Aleph ARMLinux

- <http://www.aleph1.co.uk/armlinux/riscos/>
- Debian 2.2 modern distribution.
- £40 for CDs and Manual/Guide.
- Supports RiscPCs only!
- Easier than ARMLinux alone...

Linux on the ARM Platform...

Not strictly Linux!

- NetBSD
- FreeBSD
- Risc IX
 - R140
 - R225
 - R260

Command Line Access

- The main Linux interface is through the command line, like F12 under RISC OS.
- Access can be local from the the console or remotely via Telnet or SSH
- Telnet is not secure
- Nettle supports Telnet and SSH
- <http://nettle.sourceforge.net/>
- For telnet access use ANT Term or similar
- PuTTY for SSH access from Win32

File Sharing

File sharing options

- FTP
- NFS
- Samba

Most modern Linux distributions come with all three, although not configured!

File Sharing...

- Access to all three options are available to RISC OS users
- FTP is easy to configure but difficult to configure securely!
- NFS is more difficult to configure, has many security vulnerability and is very limited.
- Samba is easy to configure, very flexible and offers better functionality.

File Sharing...

- Access to FTP sites on a Linux box is the same as accessing your web space on an ISP server using a FTP client.
- Access to NFS mounts is through Omniclient.
- Access to Samba shares is through Omniclient or LanMAN '98.

File Sharing...

Access to a share on a Linux box can offer many possibilities.

- Backup of data.
- Access to USB devices such as digital cameras.
- Access to external mounted systems.
- Access to tap drives.
- Printing to different printers.

File Sharing...

- LANMan '98 £35+VAT
- <http://www.warmsilence.demon.co.uk/>
- Samba for RISC OS
- <http://homepage.ntlworld.com/davidrhb/>
- Samba O'Reilly book
- <http://www.oreilly.com/catalog/samba/>

- You can mount a samba share under Linux with smbclient or a kernel patch.

Desktop Access

- You can share desktops between RISC OS and Linux machines
- VNC (Virtual Network computing)
- <http://www.uk.research.att.com/vnc/>
- Allows you to run Netscape from RISC OS.
 - Access online banking
 - No more type 5 errors! :-)
- Run X programs under RISC OS

Desktop Access...

- VNC for RISC OS
- <http://www.bigblue.demon.co.uk/VNC.html>
- <http://www.brighteyes.u-net.com/html/download.html>
- VNC Server for RISC OS
- <http://www.paulcorke.freemove.co.uk/vnc/>

RISC OS Under Linux

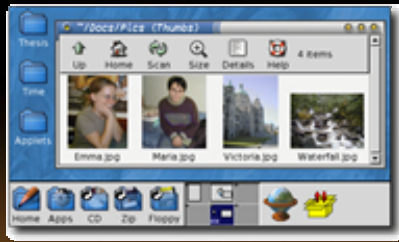
- Surely not?
- Red Squirrel/Virtual A5000 port?
- RS/VA5000 running under Wine?
- ROX Desktop/Filer
- ArcEM
- RISCOse

RISC OS Under Linux...

ROX Desktop/Filer

- <http://rox.sourceforge.net/>
- ROX is RISC OS on X
- ROX tries to give X a RISC OS look and feel
- Supports
 - Drag and drop
 - Middle mouse button
 - RISC OS style permissions

RISC OS Under Linux...



RISC OS Under Linux...



RISC OS Under Linux...

ArcEm

- <http://arcem.sourceforge.net/>
- Emulator for an A400
- Runs RISC OS 3.1
- Supports X-Windows, Windows and Mac OS X

RISC OS Under Linux...

RISC OSe

- <http://riscose.sourceforge.net/>
- Project to write a RISC OS emulator at the SWI level.
- Will allow RISC OS code to run on other platforms without any need for ROMS

Demo and Questions
