

***Linux introduction: What solutions can
Linux provide your business?***

Craig Jacquez
Direct Data Corporation
cjacquez@directdata.net

Linux Overview

- ⇒ 1991 – Linus Torvalds develops Linux as an Open Source *UNIX clone*
- ⇒ Linus still works with kernel development
- ⇒ “Linux” is really the kernel, but is general term
- ⇒ Distribution = kernel + software + install/configuration utilities
- ⇒ Many “Distros” 300+ available
- ⇒ Many highly specialized

Linux Distros

- ⇒ <http://distrowatch.com>
- ⇒ Distros include: Red Hat, SuSE, Mandrake, Debian, Slackware, etc.
- ⇒ Live versions - run from CD/DVD ISO image
- ⇒ Download most free from Internet
- ⇒ Server versions as well as desktop
- ⇒ Package management available:
 - RPM
 - Debian apt-get
 - SRC, TGZ, etc.

Why use Linux?

- ⇒ Expense to upgrade hardware just because of software demands – Linux can use less
- ⇒ Cost of software purchases:
 - Microsoft Office
- ⇒ Security
- ⇒ Open Source Software
- ⇒ Linux is over 10 years old: stable, secure server platform
- ⇒ Linux improving for the desktop

Why Consider for Desktop?

- ⇒ Choice of graphical interfaces
- ⇒ Desktop based on X Windows (Xfree86)
- ⇒ KDE (K Desktop Environment)
- ⇒ GNOME (GNU Network Object Model Environment)
- ⇒ Desktop Applications:
 - OpenOffice, Star Office, K Office
 - GIMP (like photoshop), Dia (like Visio)
- ⇒ <http://linuxshop.ru/linuxbegin/win-lin-soft-en/table.shtml>

Still need Window Applications?

- ⇒ Run VMWare
- ⇒ Run Cross-Over Office -Pixar uses on over 2,400 technical workstations
- ⇒ Run Wine
- ⇒ Run via MS Window's Terminal Services
- ⇒ Windows File Sharing - Samba
- ⇒ Active Directory – Open LDAP
- ⇒ Automated OS install – Kickstart, AutoInstall
- ⇒ .NET framework - Mono

Linux on the Server?

- ⇒ Apache – http
- ⇒ TOMCAT, JBOSS – J2EE
- ⇒ Database – MySQL, DB2, Oracle, etc.
- ⇒ Mono - .NET
- ⇒ Java, PHP, Perl
- ⇒ DNS, DHCP
- ⇒ Firewall, Router
- ⇒ XWindows – serve thin clients
- ⇒ etc...

Linux Hardware

- ⇒ 32 bit CISC – X86, Intel, AMD
- ⇒ 64 bit RISC – POWERPC, Intel, AMD, UltraSPARC
- ⇒ 390 – Mainframe, Compaq/DEC VAX
- ⇒ XBOX, ARM, MIPS, SONY PS2
- ⇒ PA-RISC – HP
- ⇒ Clusters
- ⇒ embedded – PDA, cell phones, Linksys
- ⇒ etc...

What does the Kernel do?

- ⇒ Kernel - 5 Main Subsystems
 - SCHED - Process Scheduler
 - MM - Memory Manager
 - VFS - Virtual File System
 - NET – Network Interface
 - IPC – Inter-Process Communication

Kernels - 2.4 vs. 2.6

- ⇒ 2.6 has improved performance & scalability
- ⇒ Check it out - with the IBM workload estimator

How to get to Linux?

⇒ MS Windows environment

- open source - <http://sourceforge.net>
 - OpenOffice, Dia
 - Mozilla's Firefox
 - MySQL
 - Apache
 - install cygwin

⇒ Server environment

- Old Intel hardware – replace network services
- LPAR - create PPC Partition
- new i5 run on integrated xSeries
- begin using shell scripts – use shell

Linux Design

⇒ Files

- No drive letters
- kind of like IFS root
- can mount/dismount drives/directories
- local or remote
- NFS can overlay directories

⇒ Processes

- assigned priority
- foreground background
- multi-threaded
- multi-user

Linux Access

- ⇒ Console, multiple sessions
- ⇒ Command line or GUI optional
- ⇒ Telnet or SSH
- ⇒ XWindows - local/remote (multi desktop)

Conclusion

- ⇒ Linux is growing fast
- ⇒ Linux is low cost entry
- ⇒ Linux is moving forward rapidly
- ⇒ Linux is flexible
- ⇒ Linux runs everywhere
- ⇒ Linux has been adopted by larger hardware/software vendors
- ⇒ Linux Servers dominate the Internet today