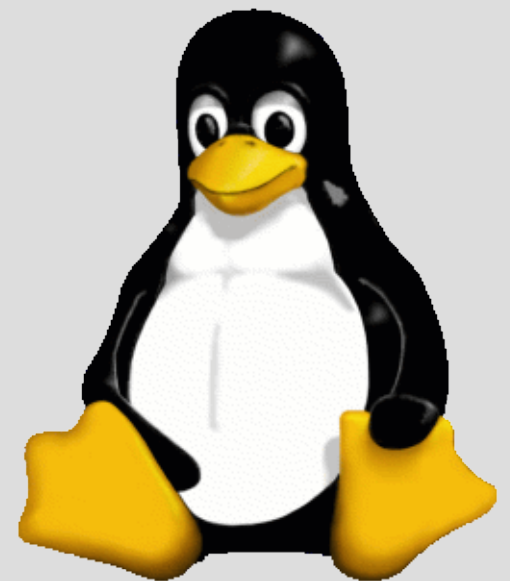


# Introduction to Linux

UWI Computing Society  
Presenter: Nissan Dookeran  
Level: Intermediate

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# Goals of this session

- Generate interest and questions about Linux and its underlying nature
- Understand what Linux is and where it came from
- To see CHOICE as a fundamental strength (and “weakness”) of Linux
- Architecture of Linux, from Kernel to Shells to X, Window Managers and Desktop Environments
- Know where to go from here to learn more...

# NOT Goals of this session

- Show why Linux is better than Windows or MacOS X
- Give you enough Linux for your resume
- Know how to totally use a particular Linux system (I'll just to start you in a good direction)

# The email that started it...

From: torvalds@klaava.Helsinki.FI (Linus Benedict Torvalds)

Newsgroups: comp.os.minix

Subject: What would you like to see most in minix?

Summary: small poll for my new operating system

Message-ID: <1991Aug25.205708.9541@klaava.Helsinki.FI>

Date: 25 Aug 91 20:57:08 GMT

Organization: University of Helsinki

Hello everybody out there using minix -

I'm doing a (free) operating system (just a hobby, won't be big and professional like gnu) for 386(486) AT clones. This has been brewing since april, and is starting to get ready. I'd like any feedback on things people like/dislike in minix, as my OS resembles it somewhat (same physical layout of the file-system (due to practical reasons) among other things).

I've currently ported bash(1.08) and gcc(1.40), and things seem to work. This implies that I'll get something practical within a few months, and I'd like to know what features most people would want. Any suggestions are welcome, but I won't promise I'll implement them :-)

Linus (torvalds@kruuna.helsinki.fi)

PS. Yes - it's free of any minix code, and it has a multi-threaded fs. It is NOT protable (uses 386 task switching etc), and it probably never will support anything other than AT-harddisks, as that's all I have :-).



# History of Linux



- The first Linux kernel was created by Linus Torvalds
- However the first Linux system (GNU/ Linux) also owes credit to Richard Stallman
- Linus had the kernel and needed other software to make a full working system, which RMS's GNU Project had
- Thus
  - Linux Kernel + FSF packages = GNU/ Linux

# Where Linux has reached today

- Majority of Internet web servers' backend
- Major software runs on it e.g. **Oracle, OpenOffice.org, Mozilla Firefox**
- Major movies have been made using it (Shrek 2, Toy Story)
- It can be run without installing using Live- CDs (Knoppix, Morphix, Mepis)
- It is now easy enough for the day- to- day end user (Linspire, Xandros)
- Windows software can run on it (limited feature)

# Linux is about choice

- Different people like to do things different ways
- Linux allows as much choice as you want
- Distributions or “distros” appeal to persons by providing Linux systems with popular choices (user interface as well as software)
- Sometimes these choices cost BUT...
- The Linux kernel remains free!

# Typical Linux “Distro” Configuration

- The kernel (currently stable at 2.6.11)
- The kernel modules and drivers
- The shell
- The X Window System (aka “X”)
- The Window Manager
- The Desktop Environment
- What are all of these???



# Linux System Architecture choices!!!

- The kernel
  - may use Linux 2.4 kernel (or 2.7x if brave)
- The kernel modules and drivers
  - NDISWrapper, NTFS Drivers etc
- The shell
  - sh, csh, bash, zsh, tcsh etc
- The X Window System (X)
  - X.org, XFree86.org
- The Window Manager
  - ICEWM, FVWM, Metacity, Enlightenment etc
- The Desktop Environment
  - KDE, GNOME, “Project Looking Glass”

# Areas to Explore

- The Linux Filesystem Structure
- Linux networking (X11, NFS, Samba)
- Linux programming (Java, Python, C, C++ , Mono)
- Linux programming IDEs (Eclipse, IDLE, KDevelop, MonoDevelop)
- Linux security (and security distros) (IPTables, IPCop, Smoothwall)
- Linux gaming (and gaming Live- CDs) (OpenGL, WineX, Knoppix- Gamer, Morphix- Gamer)

# Other Operating Systems Linux Software Runs On

- Linux is POSIX- compliant, the standard for any UNIX system.
- This means software which compiles to Linux can compile to another POSIX-compliant OS (and vice versa) e.g.
  - FreeBSD – Technically NOT Linux, but still Unix
  - NetBSD – Unix system geared towards security
  - OpenBSD – Another Unix system
  - QNX Neutrino – runs NASA critical systems

# Next Steps of Action

- Get a Live- CD (**Knoppix**, **Mepis**, **MandrakeMove**) and play around
- Join a LUG (Linux User's Group)
  - [ttlug@yahooogroups.com](mailto:ttlug@yahooogroups.com)
- Build it, break it (or try to), build it again (**proceed with caution here**)
- RTFM, what you read is what you learn, what you learn is what you get
- Look at the source code, it's free!
- Read what interests you online

# Resource web sites to help

- Google - <http://www.google.com>
- Linux Documentation Project - <http://www.tldp.org>
- Linux online - <http://www.linux.org>
- Newsforge - <http://www.newsforge.com>
- Slashdot - <http://slashdot.org>
- Distrowatch - <http://www.distrowatch.org>
- Linux kernel developments (more techie) - <http://www.kernel.org>

# Linux

WHERE DO YOU WANT TO GO TOMORROW?

