Welcome
A Basic Introduction to Linux

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Linux Basics

An Introduction
Like DOS, MS Windows, or Mac OS-X, Linux is an Operating System.

There are more than 200 forms of Linux available. More than 100 are active.

- Tux is the Linux mascot and official trade mark.
- DistroWatch tracks top 100 versions
- http://www.distrowatch.com/
- Linus Torvold holds the Linux™ (Trademark).
What is an “Operating System”?

An operating system (“OS” for short) is a computer’s master control program.

- It manages internal functions.
- It controls the computer's operations.
- It gives resources to other running programs.
Why do we need an OS?

• Without an operating system, each program installed in a computer would have to control all of the computer’s hardware on its own.

  All Other Application Programs BLOfeld

  ONE Application Program Running

  Computer (hardware)

• Programs would fight one another for hardware control, making “multi-tasking” impossible.
How would we pick an OS?

• OS Compatibility
  • with your computer hardware
  • with other systems (i.e. networking)
  • with specific application software

• OS Features
  • Standard Features
  • Special Features

• OS Cost
  • Purchase price, availability of updates
  • License issues
Open Source Software

- http://www.opensource.org/
- Key Points of Open Source:
  - **Free** Acquisition & Redistribution
  - Source Code (must be included or available)
  - Derived Works (must allow modifications)
  - Integrity of Source Code (credit to authors)
  - No Discrimination (of persons, groups or use)
  - Distribution of License (can not be restricted)
How do we use an OS?

- An operating system has a “user interface” to accept commands.
- It can be text-based...
- ...or graphics-based.
Linux Distributions
Variety Is The Spice Of Linux

• There are more than 200 different forms of Linux.
• Linux distributions, known as “distros” are based on one of several "core" versions.
• Compare distros at http://www.distrowatch.com/
• Special features and more applications may be added to distros.
D@##% Small Linux

Thank you very much for using DSL!
Small Linux

- Used frequently to “boot” Linux directly from a USB flash drive, or a small “business-card” CD.
- Capable of running on “legacy” PCs which may not support newer Windows operating systems.
Puppy Linux
Puppy Linux

- Puppy Linux uses a traditional “graphical user interface” desktop like many popular Linux distros, such as antiX, Knoppix, MEPHIS, openSUSE, PCLinuxOS, or Zorin.

- Users moving from MS Windows to these Linux distros will easily recognize many similarities to the MS Windows “desktop”.
Ubuntu Linux
Ubuntu Linux

- An early Linux variant for both Macintosh or Windows systems.
- Claims to be most popular Linux.
- Once used the traditional GNOME version 2 graphical user interface. It is now fairly similar to that of MacOS X, and shares some of its features, such as selectable “desktop panes”.
- Now uses the **Unity** desktop environment that is geared to newer touch screen hardware.
Edubuntu Kubuntu Xubuntu
Edubuntu Kubuntu Xubuntu

- Edubuntu uses the new GNOME 3 graphical environment instead of Unity. Focus is on educational tools.
- Kubuntu uses the KDE graphical environment.
- Xubuntu uses the XFCE graphical environment for low power computers.
LinuxMint Linux
LinuxMint Linux

• Uses the Ubuntu software repositories.

• Uses the **MATE** or **Cinnamon** desktop environment instead of Gnome or Unity. MATE and Cinnamon are more familiar and traditional than the new Ubuntu and its variants.

• Highly recommended for Linux **newcomers**.
Installing Linux
Systems Pre-Loaded with Linux

- Major vendors infrequently provide Linux pre-loaded
- Examples, such as the ASUS EeePC and the PowerSpec N108, used different Linux distributions as their default operating system

- Some computer vendors that pre-load Linux
  - System76
  - EmperorLinux
  - ZaReason
  - LinuxCertified
  - Los Alamos Computers
  - InaTeX Computers
The Best Of Both Worlds

• Linux can usually be installed in a "dual boot" mode.

• A startup “boot loader” menu allows the user to either start Linux or the vendor's original OS.
Disc Or Download

• Now Available at Micro Center: Distributions of Linux can be purchased as low-cost “stand-alone” CDs or DVDs.
• Or, order from http://www.osdisc.com/

• Linux can also be downloaded via a “broadband” Internet service as an ISO disc-image file, and burned as a bootable CD, DVD or USBstick.
Test Drive Linux

• Most Linux distributions use a “Run Live” feature, allowing the user to safely run Linux directly from CD-ROM or other media without making any permanent change.
Linux System Requirements
(example: Ubuntu Linux version 8.x)

- 32- or 64-bit PC with 800 MHz+ CPU (including Macintosh G3 or newer)
- 384 MB of RAM recommended (256 MB minimum)
- Hard drive with 3 GB free space
- 1024×768 or higher resolution monitor (3-D graphics accelerator card for some games, screen savers, etc.)
- CD-ROM or DVD drive
- Keyboard & Mouse
- Sound card and speakers or headphones
- Ethernet card for Internet/LAN connectivity
- 56 Kbps hardware modem (optional)
Most Linux distributions are "Plug and Play" Ready. Test "Run Live".

- New hardware detection
- Wired & wireless networking
- USB and Firewire detection
- Device support inclues:
  - Digital Cameras
  - Scanners
  - MP3 Players
  - Flash drives, memory card readers
Install the OS

- Partition the hard drive*
- Format the hard drive*
- Copy system files*
- Configure system settings
- Update drivers
- Install software applications
- Restore your data files
Linux Installed & Running
Linux Applications
Free Open Source

- The same community development model used to create distributions of Linux is also used to make application software to run on Linux systems.
Works Well With Others

- Many open-source programs create and edit documents which are “cross-compatible” with their MacOS or Windows counterparts.
- Many have “cross-platform” versions.
Communications

• **Web Browser - Firefox**
  
  • Features an adaptable address & search bar, making it easier to find information on the Internet.
Communications

- E-mail Client - Thunderbird
  - Includes advanced searching features within the e-mail program itself.
Productivity

- The LibreOffice Suite
Productivity

The **LibreOffice** Suite came from the OpenOffice Suite.

- Developer community took the OpenOffice open source software code and greatly improved it.
- It started as an exact duplicate, added many fixes and continues to improve at a faster rate.
One of the “trade-offs” of using Linux is the relative lack of over-the-counter application software.

However, Linux users can download and install nearly any kind of application software imaginable from the Internet.
• "Malware" threats still exist under Linux.

• Open source anti-virus and security programs are available.
Resources

• Original presentation from MicroCenter
  • http://en.wikipedia.org/wiki/Linux
  • http://www.opensource.org/
  • http://www.distrowatch.com/
  • http://www.linuxscreenshots.org/
  • http://images.google.com/
  • http://www.osdisc.com/
  • http://www.linuxmint.com/
  • http://www.dedoimedo.com/computers/ubuntu-utopic-mate.html
  • http://hzwlug.sluug.org/
Summary

• Advantages of Linux:
  • Inexpensive to buy, free to download.
  • Multiple versions, different features.
  • Safe “Run Live” trial before installation.
  • Works on many PC and Mac systems.
  • Can co-exist with original vendor OS.

• Trade-offs of Linux:
  • Less “over-the-counter” software.
  • Sometimes can require more complex installation and set up of peripherals.
Intro to Linux

Questions

What are your questions?

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