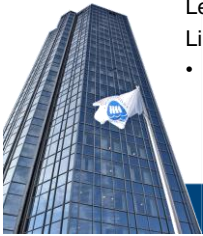


# Administration of Operating Systems

DO2003

<http://www.hh.se/do2003>



## Lecture 1

### Linux and Ubuntu Linux

- Introduction, history and overview



---

---

---

---

---

---

---

---

## Lecture overview

- At the end of the lecture students are able to:
  - Discuss the history of Linux
  - Describe its main features
  - Download a Ubuntu disk image (.iso file)
  - Install a Ubuntu distribution in VMware Player



<http://www.hh.se/do2003>

Slide 2 of 16

---

---

---

---

---

---

---

---

## What is Linux?

- Operating System (OS)
  - What is a OS?
    - Manager
- What does it manage?
  - Available resources
- Resources?
  - CPU, memory, storage, input and output
- Two main parts
  - **Kernel** allocates machine resources to all other programs that run on the computer
  - **System programs** perform higher-level housekeeping tasks



<http://www.hh.se/do2003>

Slide 3 of 16

---

---

---

---

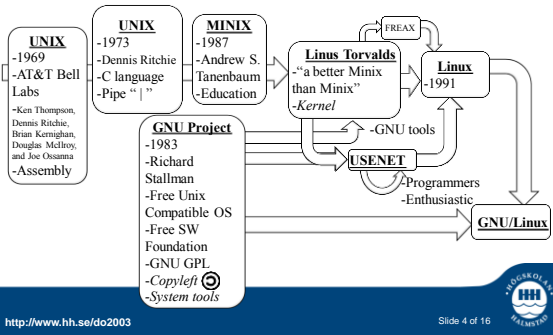
---

---

---

---

## History of Linux




---

---

---

---

---

---

---

---

---

---

---

---

## Linux Distributions or Distro

- Unix-like operating systems built on top of the Linux kernel
- Linux kernel and system programs packaging
  - SUSE, Fedora, Ubuntu, Red Hat, Debian, and Mandriva
- Biggest differences
  - How the user **installs** the operating system.
  - Which **graphical configuration** tools are installed by default.
  - Which tools are used to keep the system **up-to-date**

<http://www.hh.se/do2003> Slide 5 of 16




---

---

---

---

---

---

---

---

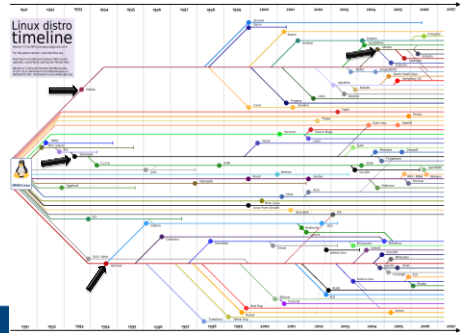
---

---

---

---

## Linux Distributions




---

---

---

---

---

---

---

---

---

---

---

---

[www.linux.com](http://www.linux.com)

- Ubuntu
- Kubuntu
- Edubuntu
- Xubuntu

Slide 7 of 16

---

---

---

---

---

---

---

---

---

---

## Overview of Linux

- Linux Kernel
- Multiuser
- Multitask
- Hierarchical filesystem
- Shell
- Utilities
- Portable

Slide 8 of 16

---

---

---

---

---

---

---

---

---

---

## Installation

- Document the current hardware and OS
- Gather and document drivers and software
- Install the OS, document configurations
- Install extra drivers
- Install applications and servers
- Update the system
- Restart and make the system live

Slide 9 of 16

---

---

---

---

---

---

---

---

---

---

## Installation

- Clean, upgrades (recommended), dual-boot
- Live/install DVD, Live/install Desktop CD, Server CD, Alternate CD
  - Server or Desktop
  - CLI (less resources) or GUI (more friendly)
- Physical machine or Virtual Machine

<http://www.hh.se/do2003>

Slide 10 of 16




---

---

---

---

---

---

---

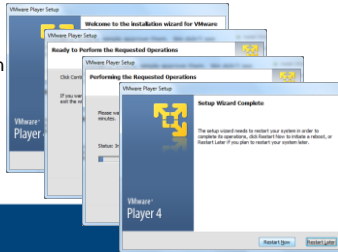
---

---

---

## Virtual Machine Software

- SW implementation of a computer that executes programs like a physical computer
  - VMWare client, VirtualBox, ...
- Isolation
- Security
- Power consumption
- Servers
- Testing
- Networks
- Snapshots



<http://www.hh.se/do2003>

---

---

---

---

---

---

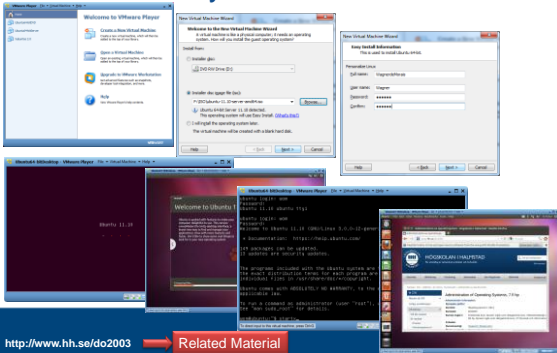
---

---

---

---

## VMware Player + Live/install DVD



<http://www.hh.se/do2003>

Related Material

---

---

---

---

---

---

---

---

---

---

## Updates

- Software packages
- Repositories
- System updates handles e.g.
  - Security breaches
  - Software/ hardware deadlocks
  - Memory leaks
- Make sure you keep your system updated!




---

---

---

---

---

---

---

---

---

---

## Documentation

- Hardware vendors and versions
- OS distribution and release
- Driver vendors and release
- Application/server distribution and release
- Updates/ upgrades made
- All non-standard configurations
- **man, apropos, info, pinfo, help**




---

---

---

---

---

---

---

---

---

---

## Shell (Command Interpreter and Programming Language)

- Textual environment
- Usually labeled "the shell" or "the prompt"
- Interface between the user and the operating system
- Commands are formatted in the following way
  - `command arg1 arg2 arg3 ...`
    - `man apropos` (know the utility but not how to use)
    - `apropos who` (don't know the utility, but know some keywords)
- Allowed combinations are system specific.
- The file structure is case sensitive




---

---

---

---

---

---

---

---

---

---



<http://www.hh.se/do2003>

Slide 16 of 16



---

---

---

---

---

---

---

---