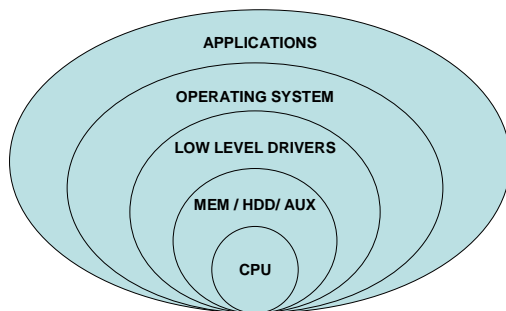


Computer system administration

Recap
Overview
Installation
File system

Hardware / OS



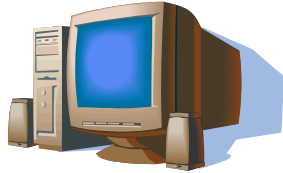
Administration?

- What is administration all about?
- How is a single computer administrated?
- How is a network of computers administred?
- What will you learn taking this course?



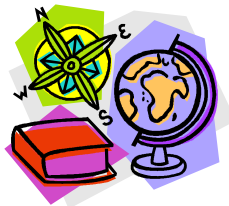
Overview – a typical OS

- File system
- User data base
- Graphical user interface
- Logging
- Periodic tasks
- Networking
- Misc. services



Overview – common tasks

- Installing an OS
- Bringing the system up and down
- OS basics
 - File system
 - Users
 - Services
- Updates
- Backup
- Networking
- Security



Installing an OS

- Documentation
- Installation sources
 - CD
 - Harddrive
 - Network
- Drivers
- Services
- Start disc



Updating an OS

- Service packs contains important updates and handles e.g.
 - Security breaches
 - Software/ hardware deadlocks
 - Memory leakages
- How to install a service pack?
 - Download it from Internet?
 - Order a CD?

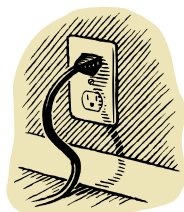
Bringing the system up/ down

- Must be done in a controlled fashion.
- Uncontrolled stops can result in system damage.
- A boot manager can be used when several different types of installations are needed.



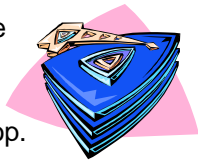
Different stop situations

- System shutdown.
- Power down mode.
- Hibernate the system.
 - Needs BIOS support.
- Black out
 - UPS
 - OS-support (consistency)



Start and stop

- When the system is up, data is distributed and not consistent.
- Configurations done during runtime might not have been saved.
- Certain services has to be stoped in a certain way.
- Harddrives might be damaged by a sudden stop.



The file system

- Partitions
 - A partition could be viewed as a "virtual harddrive".
 - Different partitions can use different formats
 - FAT32
 - NTFS
 - EXT2/ EXT3
 - OS' support these in different ways.
- Tools
 - fdisk
 - tools in Win2000/XP
 - diskdruid



The file system

Volume	Layout	Type	File System	Status	Capacity	Free Space	% Free
Contura (D:)	Partition	Basic	NTFS	Healthy	4,90 GB	504 MB	10 %
Medica (K:)	Partition	Basic	NTFS	Healthy (Active)	39,06 GB	1,60 GB	4 %
New Volume (G:)	Partition	Basic	NTFS	Healthy	29,29 GB	13,07 GB	44 %
New Volume (H:)	Partition	Basic	NTFS	Healthy	23,44 GB	3,16 GB	13 %
New Volume (I:)	Partition	Basic	NTFS	Healthy	59,05 GB	1,16 GB	1 %
Satanica (F:)	Partition	Basic	NTFS	Healthy	37,63 GB	34,18 GB	90 %
Ventura (C:)	Partition	Basic	NTFS	Healthy (System)	7,81 GB	2,29 GB	29 %

Disk 0 Basic 12,72 GB Online	Ventura (C:) 7,81 GB NTFS Healthy (System)	Contura (D:) 4,90 GB NTFS Healthy	
Disk 1 Basic 111,79 GB Online	New Volume (G:) 29,29 GB NTFS Healthy	New Volume (I:) 59,05 GB NTFS Healthy	New Volume (H:) 23,44 GB NTFS Healthy
Disk 2 Basic 76,69 GB Online	Medica (K:) 39,06 GB NTFS Healthy (Active)	Satanica (F:) 37,63 GB NTFS Healthy	

Boot manager

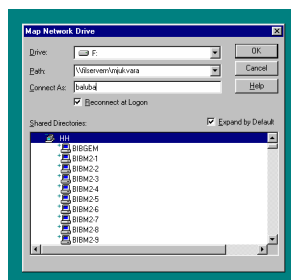
- Windows configuration handler
 - Safe mode
 - Logged mode
- Windows boot manager
 - Allows different Windows installations to be started.
- LILO
 - Allows any installation to be started.
 - Common use is to have several OS versions in the manager (stable, experimental...)

The file structure

- The file structure is what could be seen in Explorer or when you issue the command "dir".
- In Windows, the file structure looks like a tree for each partition.
 - Sub trees can be created at any point in a present tree.

Map network drive

- In Windows a network drive is mounted as a local partition.

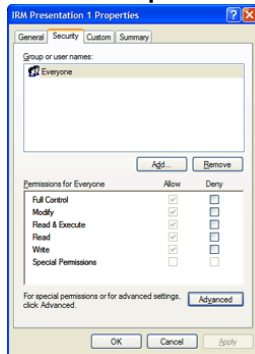


Files in the file system

- The file
 - Name
 - Data
- Directory
- Links (hard)
 - A direct link.
- Links (soft)
 - A pointer to the destination of the hard link.



Windows file permissions



File handling

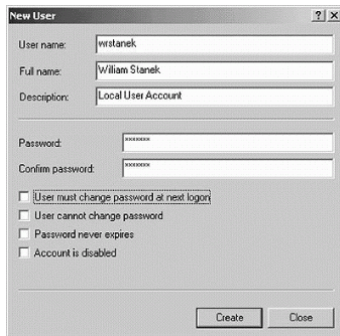
- Change configurations using a tool.
 - Usually the correct syntax.
- Change configurations manually.
 - Do things not possible in the tool.
 - Keep the correct file format.

Typical administrator tasks

- Bring systems up/ down
- Handle the file system
 - Harddrives and partitions
 - Backup
- Keep the system security
- Document system alterations
- Educate users
- Be an expert/ problem solver



Adding Windows users



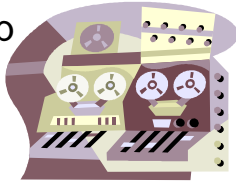
Is that IT?

- Add web accounts
- Add data base accounts
- Change the group access
- And so on...



Backup

- Make a plan
 - How to backup?
 - When to backup?
 - How to restore a backup?
 - How to test if a backup works?
 - When to discard old backups?
- Schedule the backups
- Document everything



Backup

- Full/ incrementell
- Filsystems to backup
- Backup media
 - Tape / CD / DVD
 - HDD
 - Remote
- Will the users be affected?
- What tools to use?



Permissions

- To keep unauthorized out
- To limit permissions
 - Avoid problems because of user faults.
 - Avoid problems because of software faults.



Different types of accounts

- Administrator
- Service
 - Backup
- Developer
- Restricted user
- Guest