

Course 2 Week 3.

User & Kernel Modes.

Microsoft Windows. 90% run on Windows.
↳ First GUI Windows.
for IBM compatible PCs.

→ User mode \leftrightarrow Kernel Mode
Direct control to Application.

User Mode.

→ when you start a user-mode application, windows creates a process for the application.

→ private virtual address space.

→ private handle table.

→ Each Application run in isolation

→ and if an application crashes, the crash is limited to that one application.

Kernel Mode.

→ All code that runs in kernel mode shares a single virtual address space.

→ If a kernel-mode driver accidentally writes to the wrong VA, data that belongs to the operating system or another driver can be compromised.

→ If a kernel-mode driver crashes, the entire OS crashes.

File Systems.

→ File system enables applications to store and retrieve files on

Storage devices (ndd)

→ Files are placed in a hierarchical structure. The file system specifies naming convention for files and the format for specifying the path to a file in a tree structure.

→ A file is a unit of data in the file system that a user can access and manage.

→ A directory is a hierarchical collection of directories & files.

Types of File System.

NTPS (New Technology File System)

→ Introduced in 1993

→ Most common file system for

Windows end users

→ Most Windows Servers use NTFS as well.

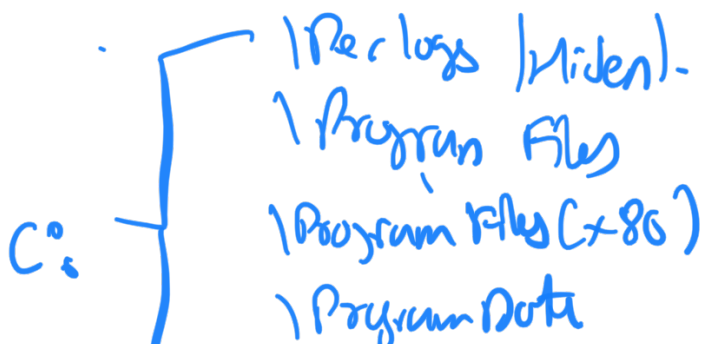
FATxx (File Allocation Table)

→ Simple file system used since the 80s.

→ Number preceding FAT refers to the number of bits used to implement a file system.

→ now mainly used for removable storage devices under 32GB capacity

Directory Structure.



Diff 32G

L Using
 Public
 C:\Users\ [User Name]
 \ App Data
 Windows
 System
 System32
 System64.

64 bit
 is Memory

Shortcuts / Commands.

Control Z

Control W

Control A

Alt + Tab → Switch App.

Alt + F4 → Close App.

Win + D : show or hide desktop.

Win left or right : Snap Windows

Tab → Shift + Tab : forward and backward

Ctrl + R → Rename

F5 - Refresh

Win+L - Lock Your Computer.

Win+I → Settings

Win+PrintScreen → Save a Screenshot

Win+Ctrl+D → Virtual Desktop

Win+X : Open a hidden menu.

Linux Systems.

File Systems.

Basic unit of storage for data

→ CLI Command Line Interface.

→ A directory is a special type of file.
A directory is a file that holds info

Linux : Directories

about other files.

→ \oint ... in CLI

/ - Root . Only root user has privileges

/root ← is home directory .

/bin → containing Binary executables
PS, ls, ping, grep, cp, mv, etc.

/sbin → system maintain

/etc → configuration files .

/var → logs

/tmp → temp files

/home → personal files .

/boot → boot time load files .

notes. ✓

How →

- 0 Halt
- 1 Single user
- 2 Multi user
no network support.
- 3 Multi user
network support
- 4 —
- 5 Graphical
- 6 Reboot.

Mac OS.