Can your site work on IE3?

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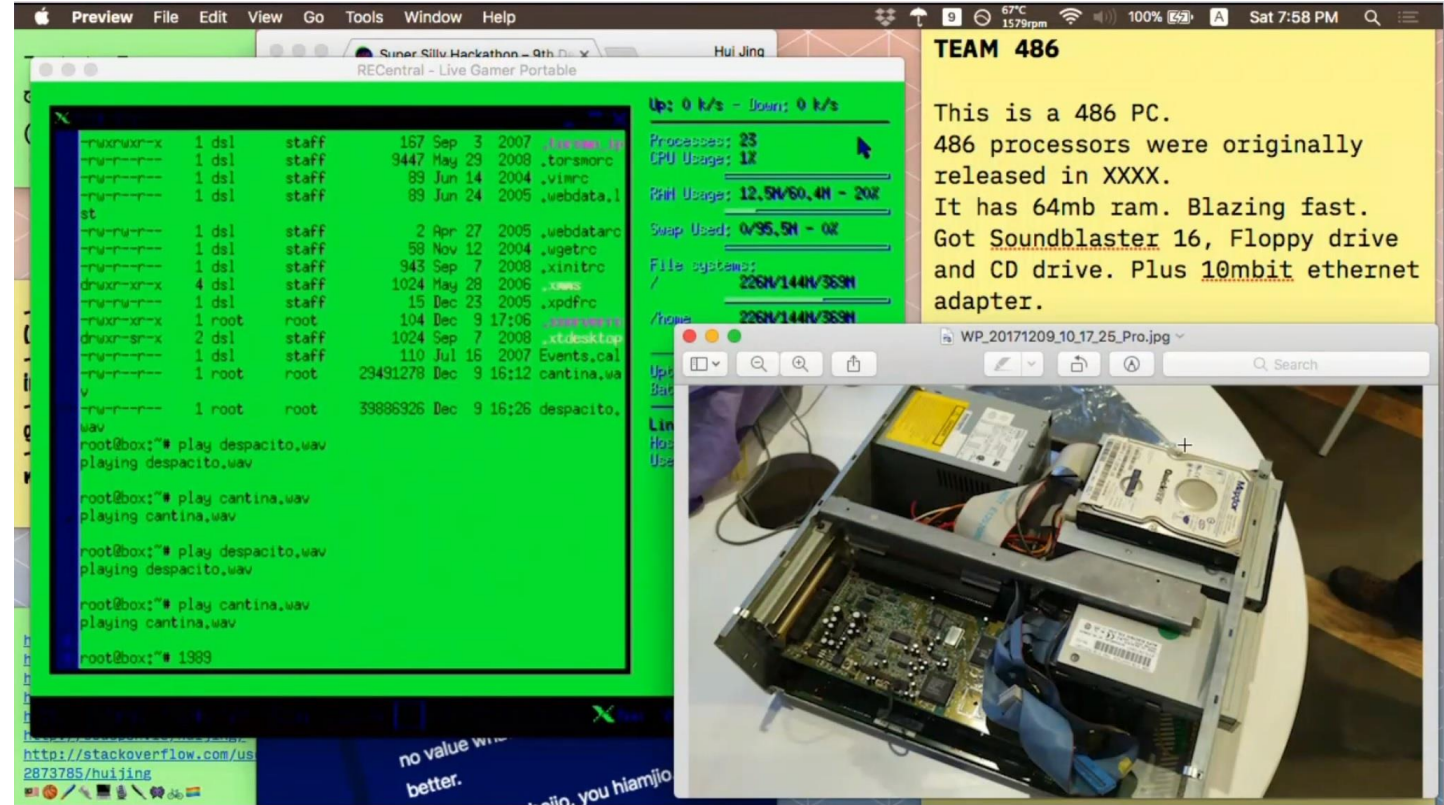
Talk CSS #39 (22 May 2019)

Agenda

1. Background

2. Quick Live Demo

3. How I got DOS 6.22, Win3.1 and networking to work

4. Live coding/debugging

Motivation

- Hack && Tell Singapore - March 2019
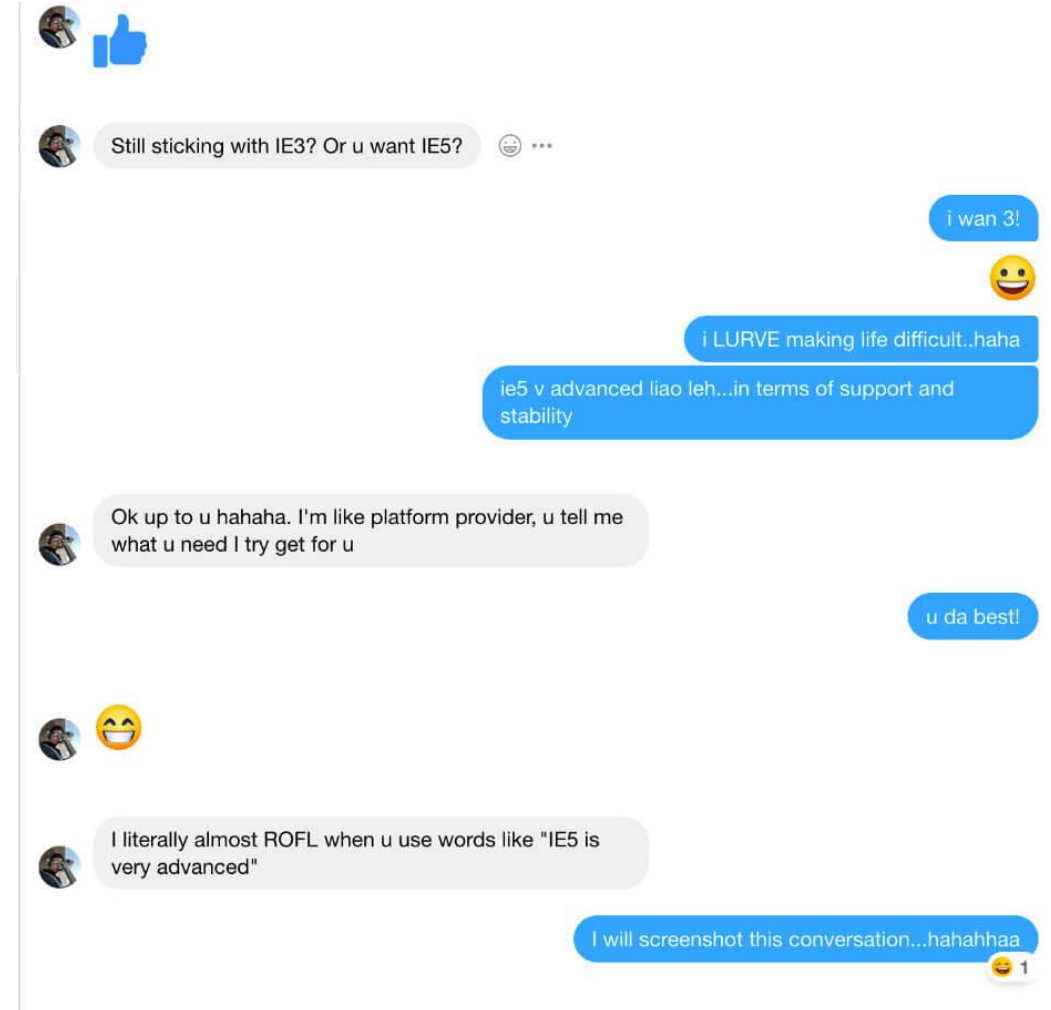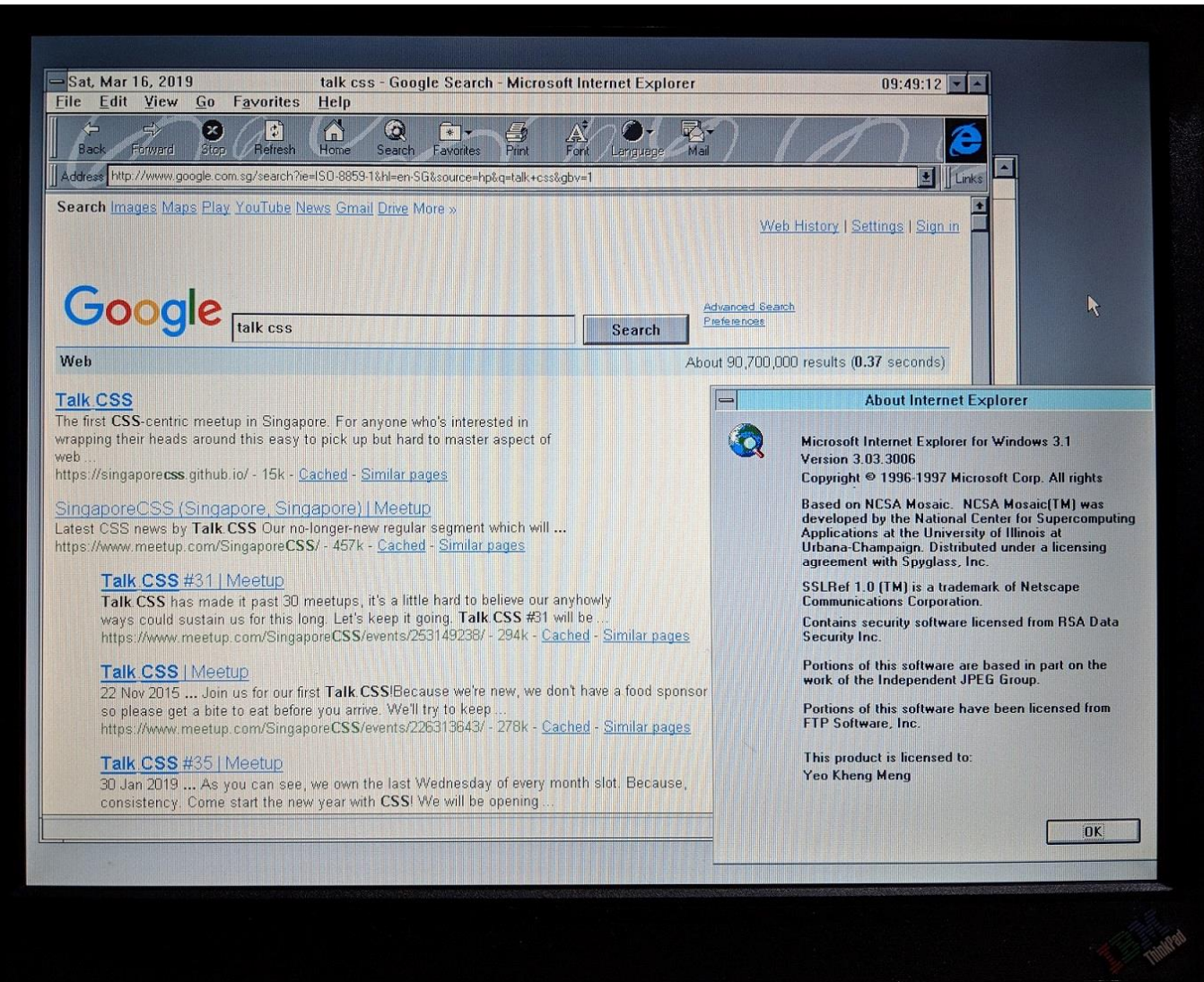
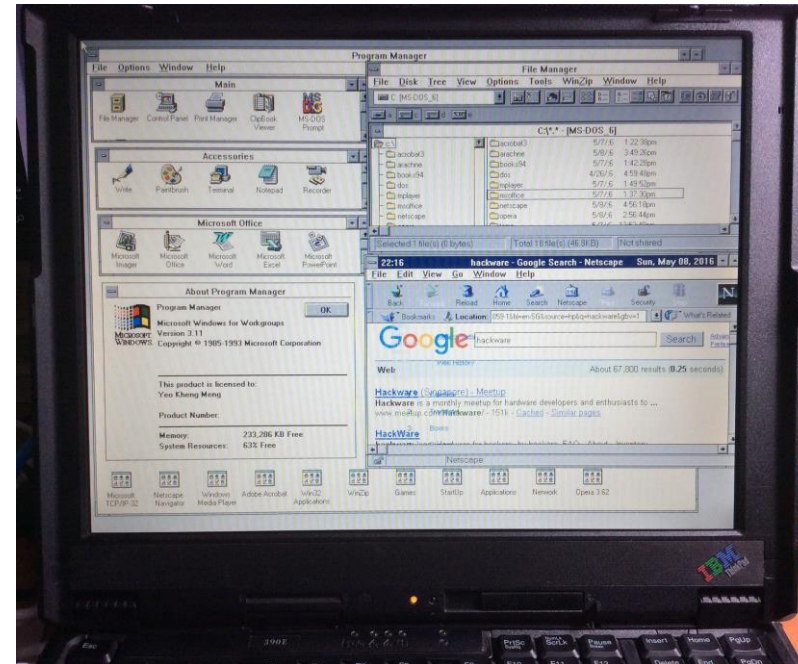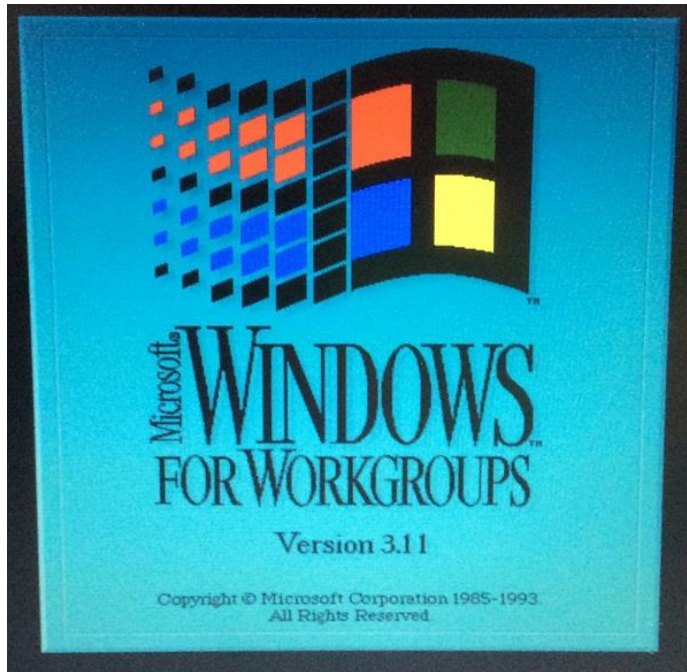# Team 486 at Super Silly Hackathon (Dec 2017)

- Huijing and I
- 486 PC + Damn Small Linux + Web Page Hosting + Playing Music

What is Internet Explorer 3 (IE3)?

- First released in 1996
- Final Update (1998): 3.03 SP1, 3.03.3006
- Supported OSes:
  - Windows 3.1, 95, NT3.x, NT 4.0
  - System 7
  - Mac OS 8

- First browser to support CSS
- https://www.w3.org/Style/CSS/msie/

So what is Windows 3.1x?

- Windows 3.1x is a series of 16-bit operating systems by Microsoft
- Windows 3.1 was released on April 6, 1992
- Windows for Workgroups 3.11 was released on August 11, 1993
- WFW first to have inbuilt networking facilities
- All Windows 3.1x versions requires ≥MS-DOS 3.1 to be installed first
- https://en.wikipedia.org/wiki/Windows_3.1x

Microsoft Timeline of DOS/Windows
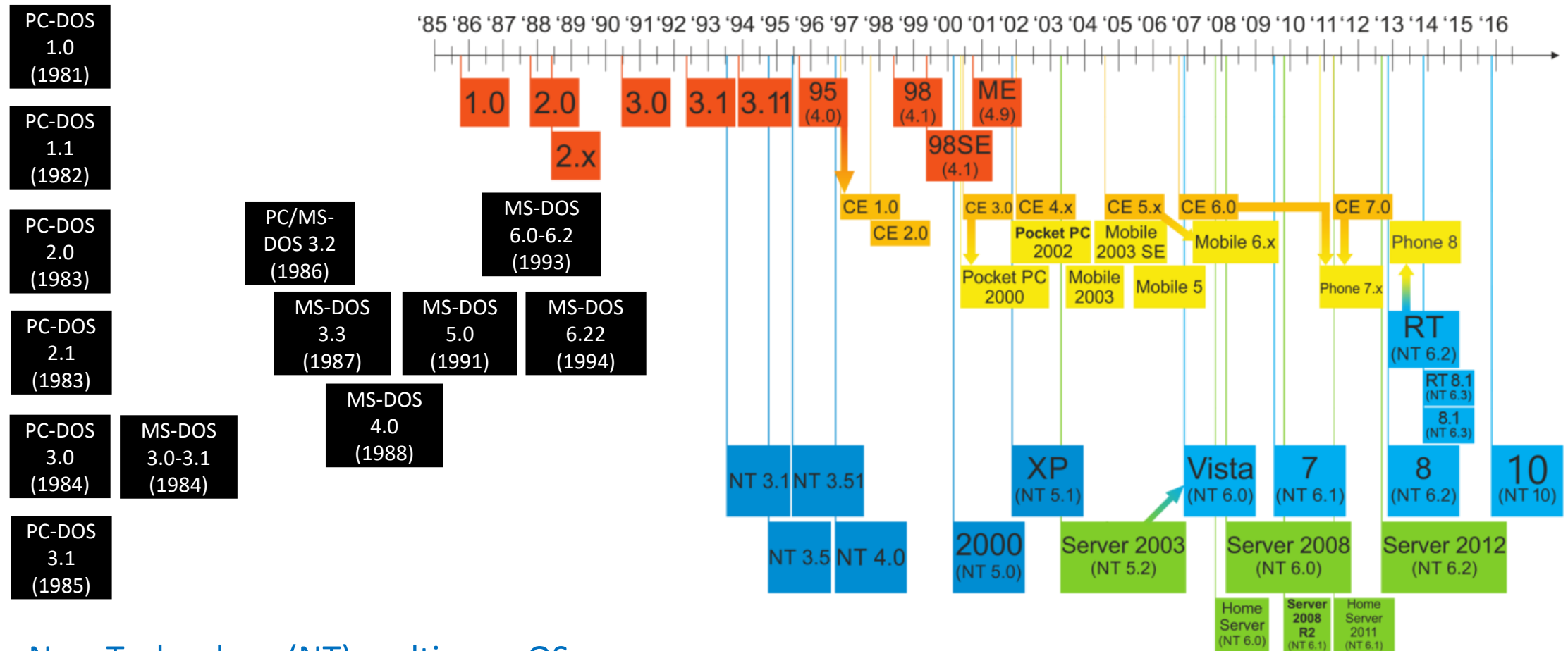
- New Technology (NT) multi-user OS
- DOS-based and Windows 9x single-user OS
- PC-DOS (IBM Personal Computer Disk Operating System)
- MS-DOS (Microsoft Disk Operating System)

7

Quick demo

IBM Thinkpad 390e

- Released in 1999 with Windows 98

- Win3.1 drivers provided by IBM

- Specifications
  - **Intel Mobile Pentium II 300Mhz**
  - Intel 440BX chipset
  - NeoMagic Media256AV 2.5MB VRAM
  - **384MB SDRAM**
  - ESS Solo-1 Audio
  - 13.1" 1024×768
  - **PATA hard drive (I used an CF card with CF-PATA converter)**
  - **CDROM + Floppy combo**
  - Serial, Parallel, PS/2, **USB 1.0**, IrDA
  - **2x Cardbus slots**

  - No Ethernet
  - 4.5cm thickness
  - 3.4kg weight

- US$2700 (1999) = US$4100 (2018) = SG$5600 (2018)
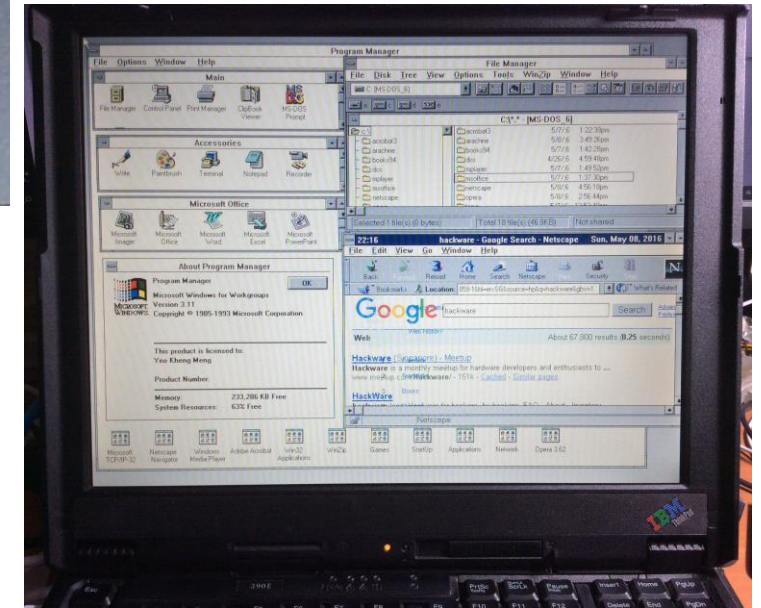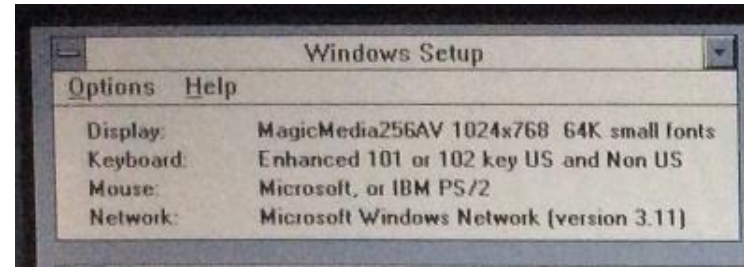
Installing DOS 6.22 and Win 3.1

- 4x DOS 6.22 diskettes

- 8x WFW 3.11 diskettes

- Mac OS X El Capitan onwards does not support USB Floppy drives

- Download links:

- https://winworldpc.com/product/ms-dos/622

- https://winworldpc.com/product/windows-3/wfw-311

CONFIG.SYS and AUTOEXEC.BAT

- Important DOS configuration files

- CONFIG.SYS
  - Loads drivers on startup

  - HIMEM.SYS: Extended Memory Manager
  - DOS=HIGH: Load DOS to HMA to save conventional memory
  - CDROMDRV.SYS: Toshiba CD driver
  - POWER.EXE: Sends x86 HALT instruction to save CPU power when idle

- AUTOEXEC.BAT
  - Stands for AUTOmatic EXECution
  - Batch file that starts at end of DOS boot process
  - SMARTDRV.EXE: Disk caching
  - MSCDEX.EXE: Assign CD drive letter to driver
  - DOSKEY.COM: Terminal history, auto-completion
  - CTMOUSE: Modern DOS mouse driver for PS/2 mouse

16 MB - 4 GB

Extended Memory

HMA

1 MB

UMA

640 KB

Conventional Memory

0 KB
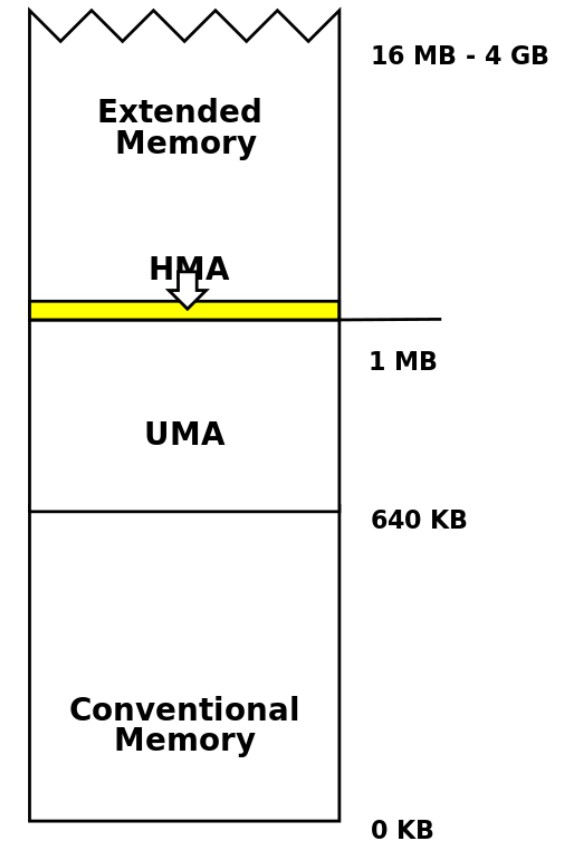
Network Connection Attempt 1

- PCMCIA/Cardbus network adapter

- Xircom Realport Cardbus Ethernet 10/100

- IBM's Cardbus slot DOS drivers DID NOT WORK!!!
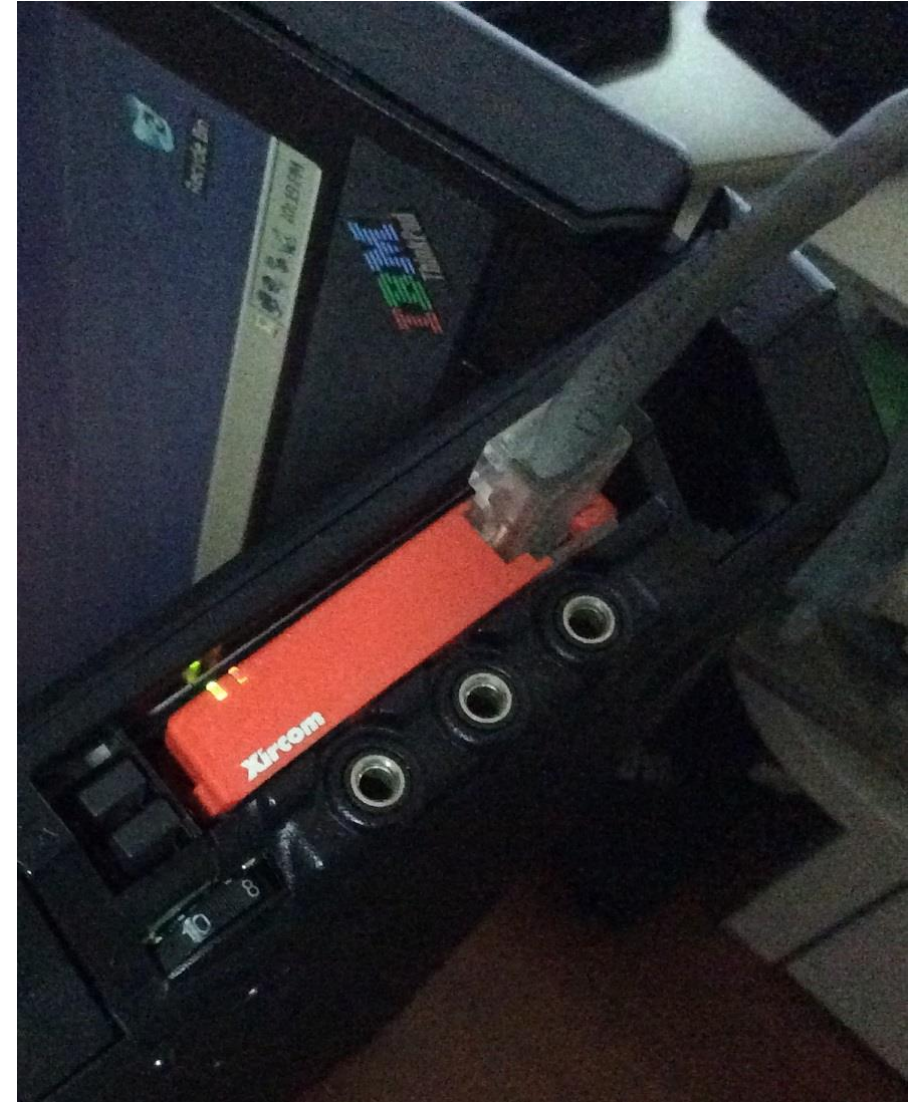
Network Connection Attempt 2

- Parallel Port network adapter
  - Xircom Pocket Ethernet PE3-10BT
  - 10Mbps
  - Powered by PS/2 passthrough cable

- Wifi-Ethernet Bridge
  - TP-Link TL-WR702N
  - 100Mbps
  - 802.11n

- DNS needs manual configuration