Can your site work on IE3?

Talk CSS #39 (22 May 2019)

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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
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)

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

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
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
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