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PCEM

OR ... HOW TO EMULATE A ... PC?!

Emulation is:

In computing, an emulator is hardware or software that enables one computer system (called the host) to behave like another computer system (called the guest). An emulator typically enables the host system to run software or use peripheral devices designed for the guest system. Emulation refers to the ability of a computer program in an electronic device to emulate (or imitate) another program or device.

One massive instance we know of since the 80s is HP Laserjet emulation.

Another is as has been demo'd at PLUG before is emulation of old video game consoles.

And for the record ...

Emulation is
NOT:



Emulation is:

Emulation is a perfectly valid legal way to preserve things that you either own or have the legal right to use.

Sadly it is often used by pirates to access content they don't have a legal right to access.

In some cases, Emulators (for example Dolphin) used Nintendo proprietary conditional access keys that were exfiltrated from Nintendo in a compromise of their security.

Why for the love of ...

Why emulate what you're already using?! This laptop is a PC right? The OS we use regardless of choice is a PC operating system right?

Right?

Yeah, and nah.

While what we use today are modern descendants of the Intel X86 platform, today's CPUs are VASTLY different and a lot of backwards compatibility is gone.

For example, Intel is planning to drop 32 bit support from some new CPU SKUs going forward. A modern Intel CPU for example will not run original MS-DOS or PC-DOS or DR-DOS or Insert-vendor-here-DOS, simply because some of the needed instructions and CPU extensions no longer exist in the name of simplicity and efficiency. FreeDOS will, but there's some quirks with it that some older programs (in this case games) will turn their noses up at and crash spectacularly.

We also cannot ignore failing hardware. Leaking batteries and capacitors literally dissolving chunks of PCB rendering the hardware dead. We can't keep everything on life support forever.

Enter PCem

“**PCem** (short for PC Emulator) is an [IBM PC emulator](#) for Windows and Linux that specializes in running old operating systems and software that are designed for IBM PC compatibles. Originally developed as an [IBM PC XT](#) emulator, it later added support for other IBM PC compatible computers as well.”

Originally developed by Sarah Walker who departed the project in June 2021, until a new developer, Michael Manley, took over in December of 2021.

Pcem not only emulates PC platforms but some PC hardware as well. It can emulate Sound Cards such as the ones we all know and love like the Adlib, Creative Labs Sound Blaster (original, Pro, 16 and AWE32) but also cards we WISH we could've had like the GUS (Gravis UltraSound) and the Adlib Gold.

Enter PCem

It can also emulate video cards, from as far back as the Hercules, all the way up to early 3D accelerators like the S3 Virge.

Can emulate classic network cards like the NE2000 range.

Can emulate classic XT hard disk styles (MFM types etc)

It can even emulate a 3DFX Voodoo card (up to a Voodoo 3) ... mostly.

Stay tuned for a future Part Two

3DFX/GUS emulation

Older OS installations

Where to get old OS install images