Kolibri svn9522 - 80486 hack

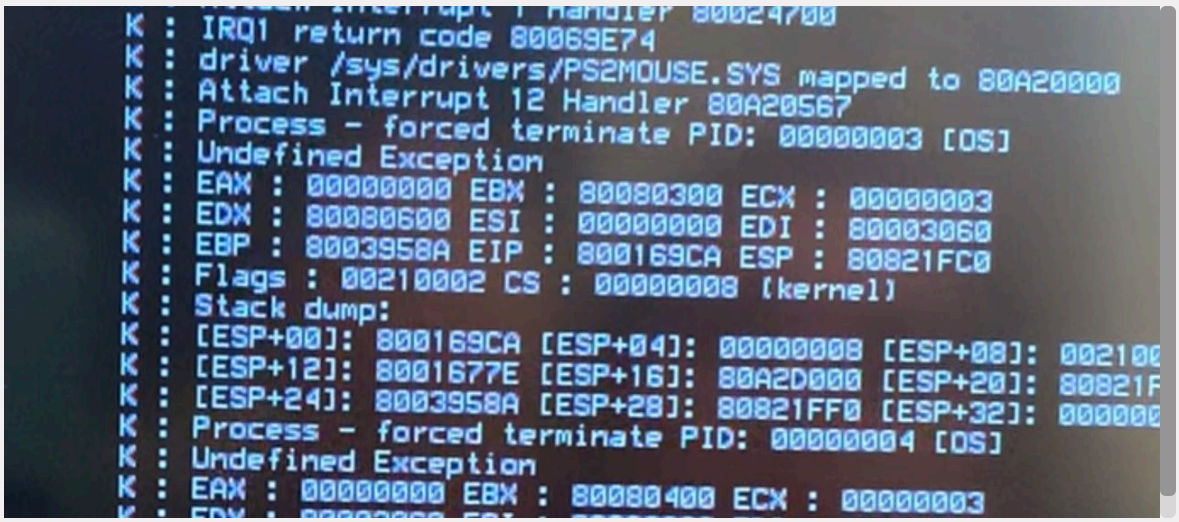
nina

Wed Dec 29, 2021 11:42 pm

I recently got myself a 486dx2 laptop with SVGA and a whopping 20 MB of memory. I needed to run Kolibri on it, right? The kernel tried to start, but crashed on frequency detection, then on sysenter, then on rdtsc. I hacked all these pieces of code, and the system started. The CPU task manager crashed on startup due to division by zero (because the frequency was detected as 0 MHz), so I had to hack its code too.
My card only supports VESA 1.2 @ 16 bpp, so the only video modes available were 640x480x4 and 320x200x8. Both are incredibly slow, but what can you do...

Overall, the system runs more or less stably and is even somewhat usable on the 80486dx2 @ 40 MHz. KFAR, FASM, BOARD, Tinypad, Fb2Read, and hexedit work, as do the control panel, the midi player, the terminal via the COM port, and even kiv. eolite, kfm2, webview, and animage don't work—they need mmx. The debugger works conditionally, but it flickers and redraws once a second and doesn't fit in 640x480. Here's some FTC; it's especially funny to look at the cpuid; the processor is detected as a Pentium Overdrive. 😃

PS: I'll attach the image and diff relative to svn9522 in the next post, because attachments aren't flexible.



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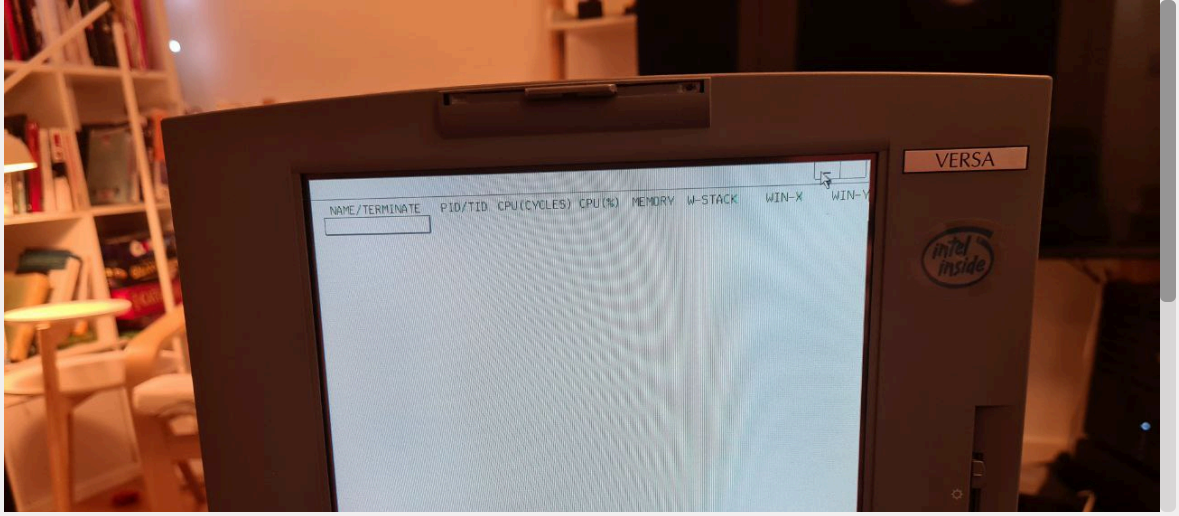

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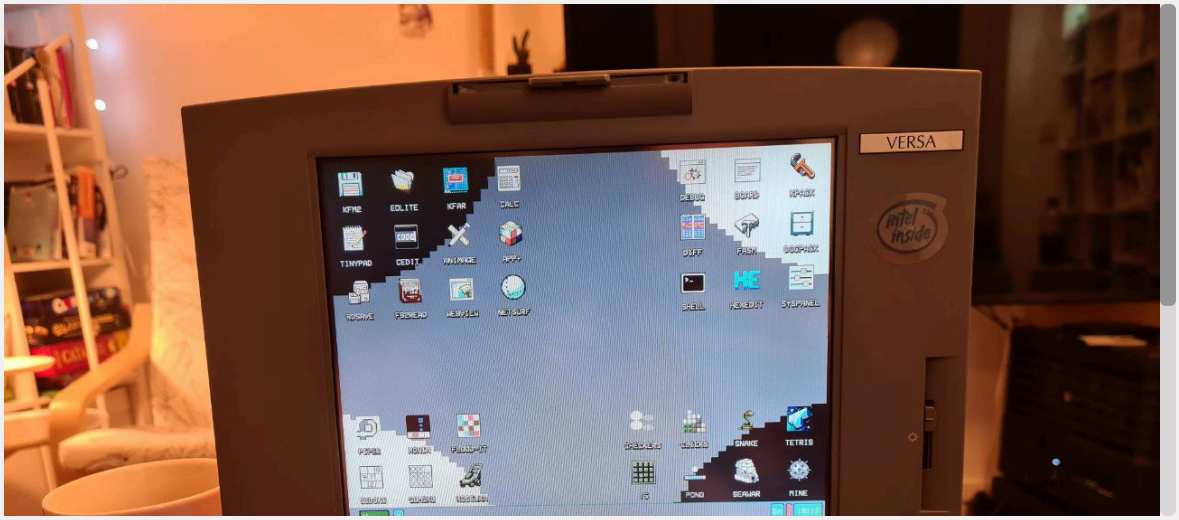

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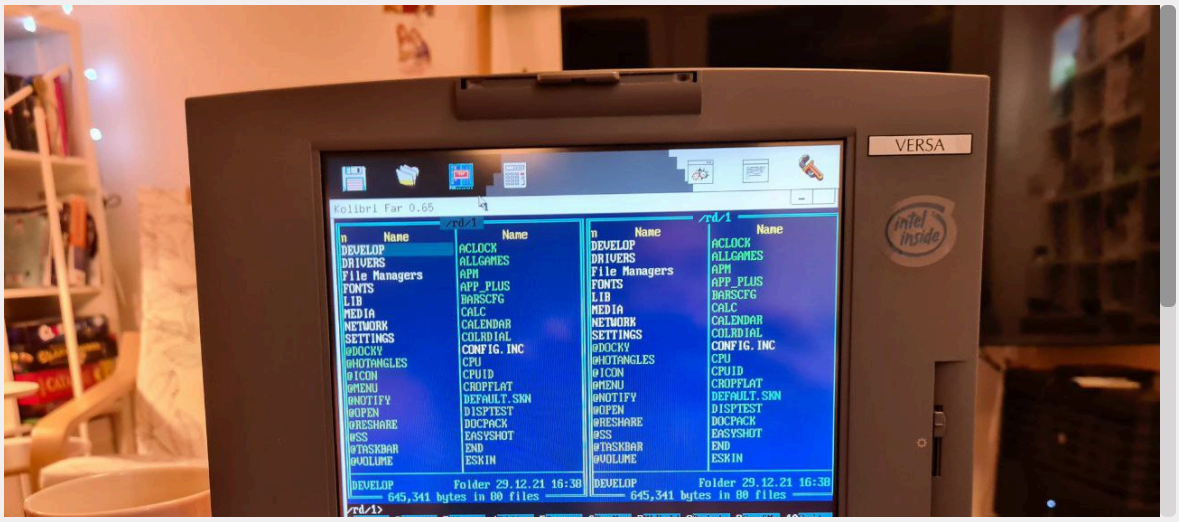

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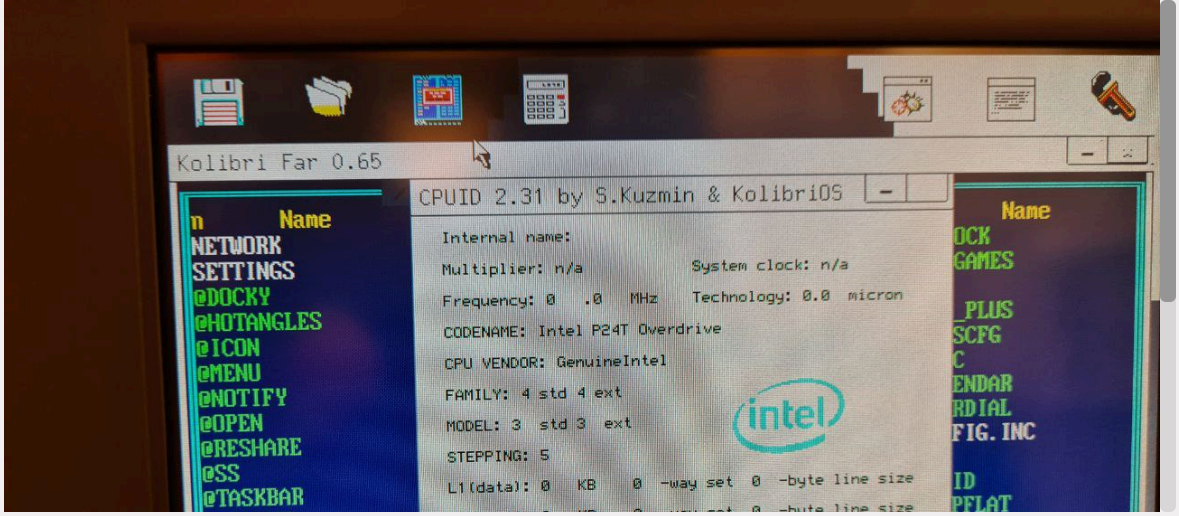

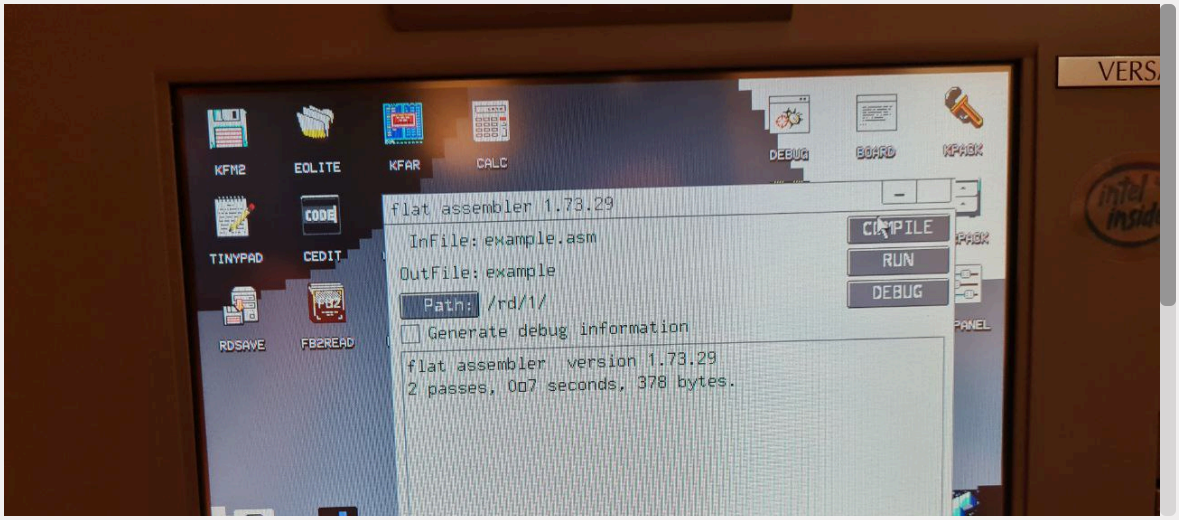

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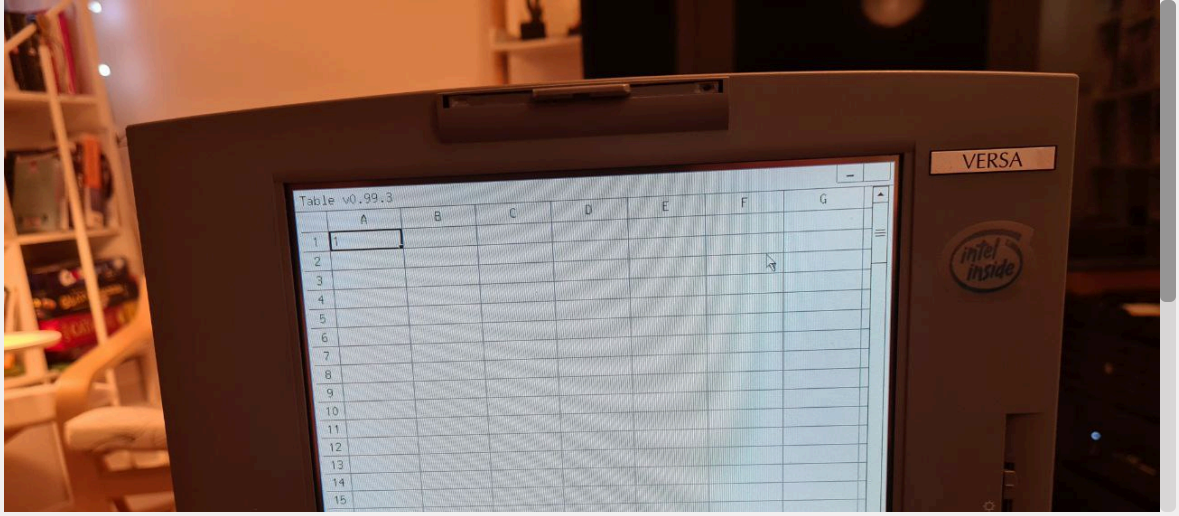

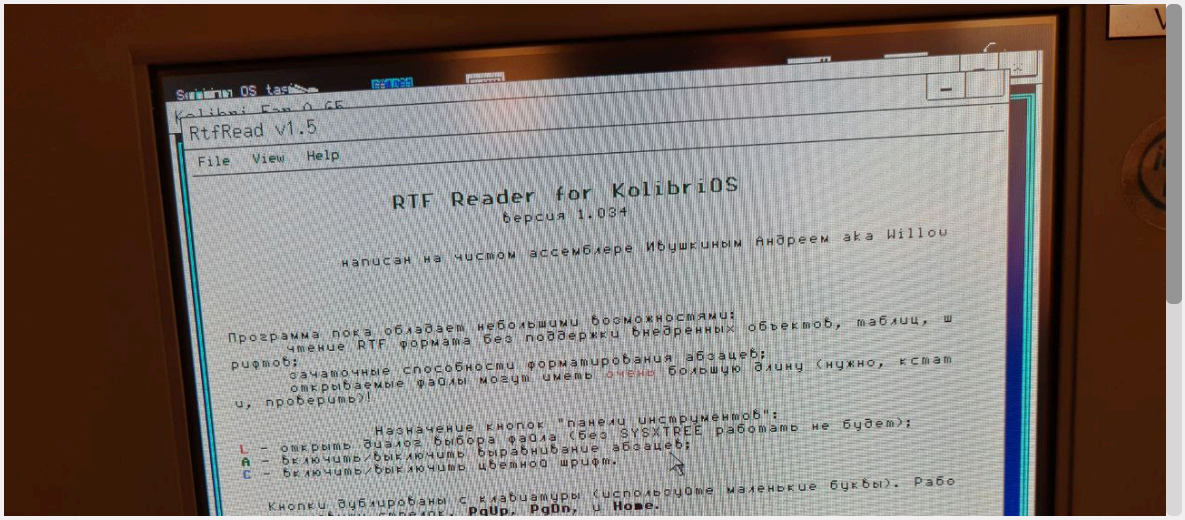

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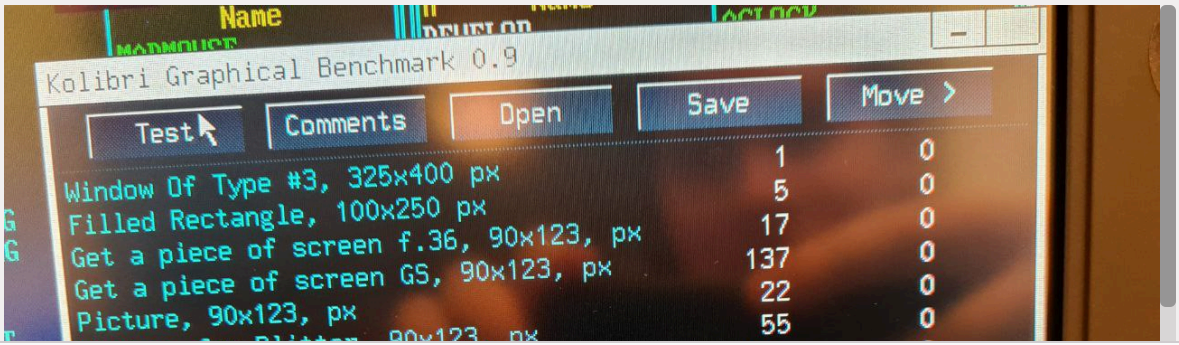

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Attached is the compiled image (without games or demos, as the hack was developed using Kolibri, and for some reason kpack refused to pack the compiled kernel, so I had to free up some space on the image), and patch files for the kernel and CPU. As you can see, the patches are very rough and more like proof of concept.

Should this hack be supported as a separate image type? I don't think so. In 640x480x4 mode, the system is much less usable than Windows 95; if anyone wants to run Kolibri programs on a 486, KlbrInWin will be faster and more reliable. Besides, the most popular applications still require MMX...

But it's a pretty fun experiment for a weekend =)

ATTACHMENTS

cpu486.diff (867 Bytes)
programs/system/CPU patch
Downloaded 358 times

k486.diff(2.95 KiB)*Kernel patch*Downloaded 306 times

k486.img.zip (1.18 MiB)*bootable floppy image*Downloaded 342 times

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