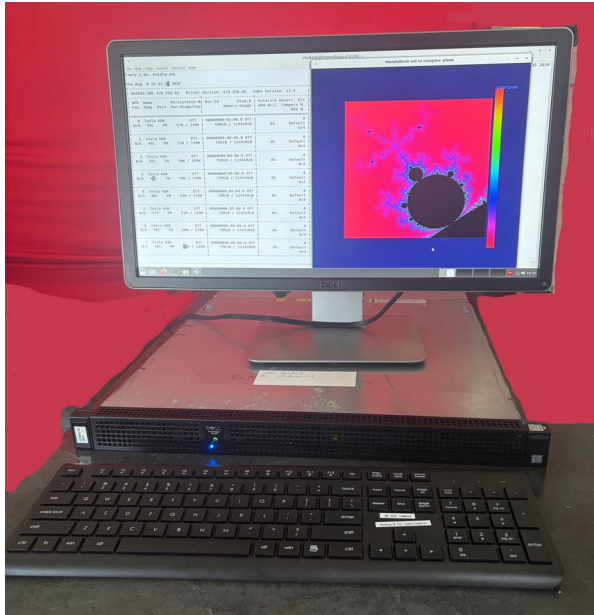


Dell C4130 supercomputer

This system was built from used/surplus parts. The total system cost was around \$XXXX, placing machines like this well inside the budgets of students, academics, and hobbyists.



Hardware

- Dell C4130 chassis with 1400W power supply.
- Two CPUs: Intel Xeon E-52626880 v4, 3.300GHz
- 128 Gig DDR4 ECC RAM.
- 4 NVidia K80 GPGPU cards; each supports 2 GK210 Kepler architecture GPUs with 2496 cores. Total system: around 20,000 cores.
- XXXX Gig hard drive.
- GPGPU card cooling: C4130 chassis is designed to support 4 K80 cards using forced-air cooling.
- Tweaks to BIOS to support K80 card and cooling fans.

Software

The hardest part of configuring a such a system is identifying specific software versions which work with each other. This system uses the below software.

- Ubuntu 20.04, Cinnamon desktop environment.
- NVidia CUDA 11.4.48.
- NVidia K80 driver 470.256.02.
- GNU build environment: gcc/g++ 9.4.0.
- Cmake 3.31.
- VTK 9.6.
- Dev environment: emacs, git, etc.
- Other utilities & libraries as needed (installed using “apt install”).
- Example CUDA program: Mandelbrot set viewer.

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