

NVIDIA TK1

Background

This system, constructed at the University as part of an ongoing interdisciplinary faculty/student project team, provides unique teaching and research capabilities to projects and students. The processing elements for each node – shown below – incorporate a massive number of compute cores originally built for specialist problems in matrix mathematics and computer graphics operations that are flexible enough for general purpose calculations.

Technical Specifications

- Processing – NVidia Tegra K1 SOC:
 - **1, 248** cores over 6 nodes, each node having a...
 - NVidia Kepler GPU (192 cores)
 - NVidia 4-Plus-1 Quad Core ARM Cortex-A15 (4 cores)
- Interconnect: Gigabit Ethernet
- Power: 12W/node
(cluster runs on 1 standard outlet)
- RAM: **2 GB** RAM per node
- Storage: 1 TB 7200 RPM drive/cluster
- Operating System: Ubuntu Linux 14.04
- Cooling: 6x CPU fans



Curricular Use

- (planned) Parallel and Distributed Computing Elective (Graduate and Undergraduate levels)
- (planned/as time permits) Computer Graphics
- (as time permits) Assembly
- (as time permits) Operating Systems
- (as requested) Courses in Electrical and Computer Engineering

Acknowledgements

Thanks to Justin Szaday for system build and OS load/configuration, Will Foy and Paul Nord for the housing, Angelina Coleman for support with purchasing, Erik Kispert for parts and supplies, and Jim Caristi for budgeting help.

The design and teaching materials used for this system are derived from the work of: Prof. Suzanne Matthews, U.S. Military Academy * Prof. Elizabeth Shoop, Macalester College Prof. Richard Brown, St. Olaf College * Prof. Joel Adams and Jacob Caswell, Calvin College Prof. Charles Peck, Earlham College * Prof. David Toth, Centre College and the contributors to CSinParallel.

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