P56

Week 6 – Short thoughts

Friday 15:00-17:00 SE02

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Past examples of code explored

- Generate training data for a game AI (written in Go)
- Parallel n-body with OpenMP
- A simple web server
- Examining MMAP vs Non-MMAP reading of large out-of-core data-structures
- HM: some code I found on Github. (bash history manager)
- KiCad Library Utils
- Using a KUTrace Marking in Golang
- server4-client4
- git status mystery
- Improving read performance of randomly located, small contiguous blocks, in a large dataset
- Multi-threaded Read and Write
- Kutrace on 32 arm for a real time problem
- Study server_disk
- Tracing gRPC
- Dynamic MPI Mandelbrot Program
- Tracing Ligra
- Spinlock Analysis client servers from Lab4
- Map-reduce implementation of MPI
- ed25519
- Raft consensus algorithm stuff
- KUTracing a ray tracer
- Measuring a minibrowser

Picking a suitable program

One you wrote, or one whose source you have

Able to run it on our l51-piXXX machines

Can be configured to run for 10-20 seconds (or longer but you can usefully trace some 10-20 second subset)

Is not 100% CPU-bound nor 100% I/O-bound; multiple threads and network I/O are good

Allows you to add a few tracing lines to the source to delimit major sections or show some progress counter

Ideally: Something whose performance you care about and can sketch

Program proposals (still ideas)

If your proposal is a Python program, does your sketch of where the time goes involve the JIT compiler to bytecode and then the bytecode interpreter?

If your proposal needs extra software installed, do a trial run within this week and let me know what to install.

Presentations day – final day of course.

Pick a program whose performance you care about

Run it with KUtrace to see where the time is really going

Talk about what you discovered for 10 minutes, with pictures

Ten slides maximum and Ten minutes maximum.

Send me Google Slides link or PowerPoint the evening before

I will make one large slide deck for all the presentations in a day
No fly-ins or other fancy effects