

LIBOCON19

Cleaning Up Calc OpenCL Code

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Calc OpenCL mode

Calc computation modes

- classic
- Threads
- OpenCL

OpenCL

- Fast for large documents (minutes → seconds)
- Talk by Tor (Brno 2016)



How OpenCL in Calc works

- Cells contents → data vectors
- Build OpenCL kernel (C-like code)
- Run kernel with data



OpenCL code generation

- Each (supported) Calc function mapped to generated OpenCL function
- Functions call each other as necessary
- ~225 functions



State before

- ~31 KLOC
- Excessive code duplication
- Missing error checking
- Hard to read/understand



State now (WIP)

- ~16 KLOC (~50% !)
- Shared code, etc.
- Passes Calc unit tests (SC_FORCE_CALCULATION=opencl)
- Easier to read/understand
- Disabled functions (can be) enabled again



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Thank you!

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