Profiling with Callgrind

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Callgrind

One of the tools from the Valgrind suite

Tool for profiling

Records call history in a program run as a call-graph

KCacheGrind

- UI tool to visualize results
Trivial Example
Cycles

Profiling does statistics

- Results are a “summary” of calls
- It is difficult/impossible to detect internal logic of code
Cycles #2

- Common with event loop handling functions
Cycles Example
Tracing only specific parts of code

- --dump-before=function
- --dump-after=function
- --zero-before=function
Tracing only specific parts of code #2

- `valgrind -tool=callgrind -instr-atstart=no` ...
- `callgrind_control -instr=on/off`
- `#include <valgrind/callgrind.h>`
  - `CALLGRIND_START_INSTRUMENTATION`
  - `CALLGRIND_STOP_INSTRUMENTATION`
  - `CALLGRIND_DUMP_STATS`
  - `CALLGRIND_ZERO_STATS`
Selective Example
Usage in LO

- VALGRIND=callgrind soffice
- VALGRIND="callgrind -args" soffice
- Slow
  - --instr-atstart=no and selective profiling can sometimes help
Interpreting/understanding

Results and their understanding should be verified in practice

Understanding usually requires understanding code
LO example
Thank you.

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