

GPROF Quick Start

Computational Performance Workshop
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GPROF ON BG/Q

- Compile and link with `-pg`
 - E.g. `mpixlc -pg -c foo.c ; mpixlc -pg -o foo foo.o`
- `gmon.out` files generated for first 32 ranks by default
 - `BG_GMON_RANK_SUBSET=N` or `N:M` or `N:M:S`
 - `runjob -p 16 --np 32 --envs BG_GMON_RANK_SUBSET=0 : a.out`
- Profile threads
 - `BG_GMON_START_THREAD_TIMERS=all` or `nocomm`
 - or `gmon_start_all_thread_timers()` from main thread
 - or `gmon_thread_timer(0` or `1)` to stop or start
- `gprof a.out gmon.out.*`
- See also <https://www.alcf.anl.gov/user-guides/gprof-profiling-tools>

GPROF ON THETA

DO RESULTS FROM VARIOUS PROFILERS AGREE?

- GPROF

1. Add `-pg` flag & build
2. export `GMON_OUT_PREFIX=xyz`
3. Run app using: `aprun -n #/a.out`
4. (One) `xyz.<pid>` file will be produced per MPI rank
5. `gprof ./a.out xyz.*`

- Intel® VTune Amplifier XE

1. Add `-g` flag & build
2. `aprun -n # amplxe-cl --collect hotspots -trace-mpi ./a.out`
3. Use `amplxe-gui` to view results
 - `amplxe-cl --report hotspots -r ./result-dir`