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Platform Independent Profiling of a QCD Code

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The supercomputing platforms available for high performance computing based research evolve at a great rate. However, this rapid development of novel technologies requires adaptations and optimizations of the existing codes for each new machine architecture. In such context, minimizing time of efficiently porting the code on a new platform is of crucial importance. A possible solution is to use coarse grain simulations of the application that can assist in detecting performance bottlenecks. We present a procedure of implementing the intermediate profiling for openQCD code that will enable the global reduction of the cost of profiling and optimizing this code commonly used in the lattice QCD community. Our approach is based on well-known SimGrid simulator, which allows for fast and accurate performance predictions of the codes on HPC architectures. Additionally, accurate estimations of the program behavior on some future machines, not yet accessible to us, are anticipated.

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