QQ: Nanoscale Timing and Profiling

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QQ is a tool for timing and memory profiling capable of nanoscale time resolution. Designed to minimize both learning curve and impact on the profiled code, it is platform independent and usable with sequential, distributed, and parallel programs. QQ is invoked via embedded function calls, and outputs event and timing records in a compact binary format. These records can be analyzed by external software packages. QQ obtains timing information from the hardware performance monitoring facilities designed into current microprocessors. Our implementation addresses the IA32 architecture, but the similar facilities of most modern processors ;allow QQ to readily be ported to other platforms.