
Overview of application instrumentation for performance analysis and tuning

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Profiling and tuning of parallel applications is essential part of HPC. Analysis and improvement of the hot spots of an application can be done using one of many available tools, that provides measurement of resources consumption for each instrumented part of the code. Since complex applications show different behavior in each part of the code, it is desired to inserted instrumentation to separate these parts.

Besides manual instrumentation some profiling libraries provide different ways of instrumentation. Out of these the binary patching is the most universal mechanism, that highly improves user friendliness and robustness of the tool. We provide an overview of the most often used binary patching tools, and show a workflow how to use these tools to implement a binary instrumentation tool for any profiler or autotuner.

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