

Efficient Profiling of Actor-based Applications in Parallel and Distributed Systems

Applications employing the actor model of concurrent computation are becoming popular nowadays. On the one hand, the foundational characteristics of the actor model make it attractive in parallel and distributed settings. On the other hand, effective investigation of poor performance in actor-based applications requires dedicated metrics and profiling methods. Unfortunately, little research has been conducted on this topic to date, and developers are forced to investigate suboptimal performance with general-purpose profilers that fall short in locating scalability bottlenecks and performance inefficiencies. This position paper advocates the need for dedicated profiling techniques and tools for actor-based applications, focusing specifically on inter-actor communication and actor utilization. Our preliminary results support the importance of dedicated actor profiling and motivate further research on this topic.

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