

Understanding the Performance Impact of Multicore Open System Architectures

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Extracting the performance benefits from a multicore platform requires a careful balance of hardware design, programming techniques, and application parameter setting. This presentation describes a variety of techniques that can be applied to measure multicore performance showing the effects of memory bandwidth, cache optimizations, programming choices, operating system scheduling, as well as general SMP benefits and limitations. Using the performance results from several dual-core and quad-core platforms, we will also demonstrate that in the real world, it is a rare case where multicore processors scale linearly with the number of cores.