The multicore evolution and operating systems

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Multicore chips with hundreds of cores will likely be available soon. Although many applications have significant inherent parallelism (e.g., mail servers), their scalability on many cores can be limited by the underlying operating system. We have built or modified several kernels (Corey, Linux, and xv6) to explore OS designs that scale with increasing number of cores. This talk will summarize our experiences by exploring questions such as what is the impact of kernel scalability on application scalability, is a revolution in kernel design necessary to achieve kernel scalability, and what limits kernel scalability.

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