

# PIM

## Predictable Integration In Manycores

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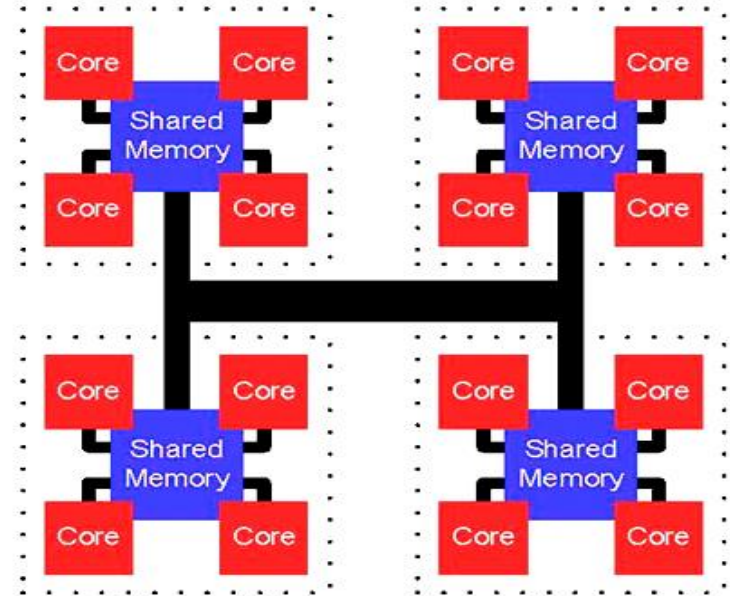
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# Manycore Scheduling: The Problem

- Traditional OS schedules CPU-bandwidth
- Memory-bandwidth is not explicitly managed
  - scheduling is done by hardware
  - maximize throughput
  - => very unpredictable
  - => no real-time
  - => integration of applications very hard





# Project idea

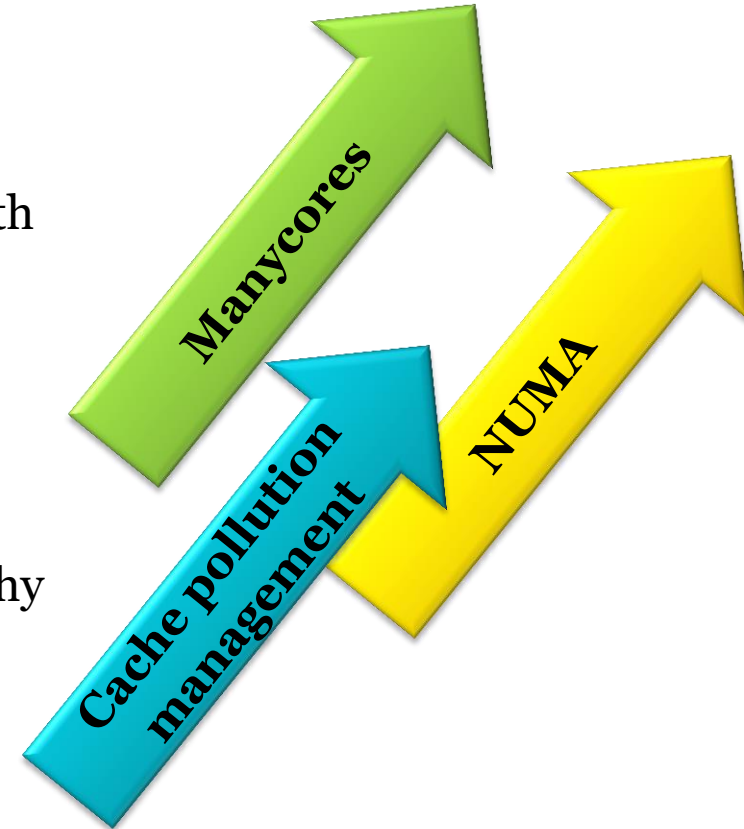
- develop operating-system support to partition execution-resources, e.g.
  - core CPU-time,
  - memory-bandwidth, and
  - shared caches,amongst different applications.
- result will be a runtime environment that allow new applications to be integrated on a manycore
  - without negative impact on performance of exiting applications





# Base-line / Preliminary results

- MDH, Ericsson and Alten
  - Linux support for memory-bandwidth arbitration
    - Intel Core Duo
  - Simple multicore architecture
  - Simple tree-shaped memory hierarchy
    - Uniform Memory Access
  - No cache management





# Thank you!



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