Future of the CPU

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Transistors
Intel CPU Trends
(sources: Intel, Wikipedia, K. Olukotun)
Architecture

- Embedded (ARM)
- Microcomputer (x86)
- Smaller more efficient
- Cache
Hyper threading

- Logical cores vs Physical cores
- Conveyer belt concept
- Not the same as doubling cores
Amdahl's Law

Parallel Portion
- 50%
- 75%
- 90%
- 95%

Speedup

Number of Processors
Software

- Compiled vs Interpreted
- Simple is good
- Optimization
- Hardware acceleration