
Rechnerarchitektur SS 2016

Exercises: Cache Performance

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Cache Performance

Please indicate the improvement (marked with "+") and the potential damage (marked with "-") of the factors for different techniques. Also indicate, in your opinion, whether a technique is widely used or not and the hardware cost (0 for no additional cost, 1 for certain cost, 2 for high cost).

Technique	hit time	bandwidth	miss penalty	miss rate	HW cost	widely used?
small/simple caches	+			-	0	yes
way-predicting caches						
pipelined caches						
nonblocking caches						
critical word first and early restart						
compiler-controlled pre-fetching						
hardware prefetching						
Merging write buffer						
Banked caches						