

Cache

Cache Optimization Summary

	Technique	MR	MP	HT	Complexity
miss rate	Larger Block Size	+	-		0
	Higher Associativity	+		-	1
	Victim Caches	+			2
	Pseudo-Associative Caches	+			2
	HW Prefetching of Instr/Data (stream buffer)	+			2
	Compiler Controlled Prefetching	+			3
	Compiler Reduce Misses	+			0
penalty	Priority to Read Misses	+	+		1
	Early Restart & Critical Word 1st		+		2
	Non-Blocking Caches		+		3
	Second Level Caches		+		2

- MR: miss rate
- MP: miss penalty
- HT: hit time

RW: non-blocking Cache ? (in P83)

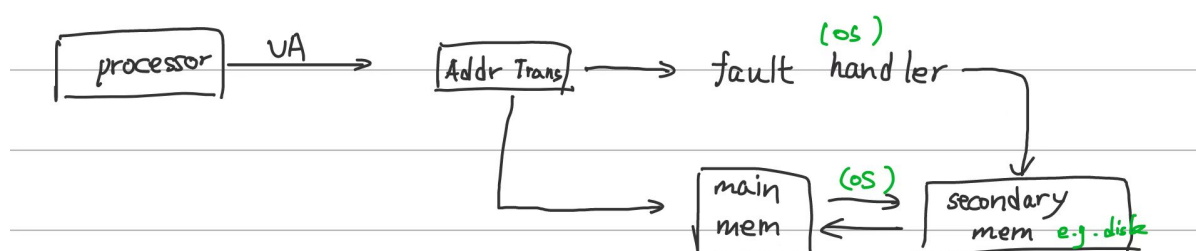
reduce T_{hit} : prefetch, outstanding...

需要寄存器: Miss Status Holding Registers

Virtual Memory

disk 内划分一块作为 mem

virtual address



Translation

- section
- segment
- page

碎片分类: external fragment, internal fragment

Page

- VA : (vp # , offset)
- PA : (physical page # , offset)
- translate : page table in mem

与 Cache 的关系

1. virtual addressing cache : 歧义 (ambiguity) & 别名 (alias)
2. physical addressing cache : 每次访问 Cache 都要翻译, 开销大

hint : 当 page 字段够左边, 此时不会出问题