

1. Cache mapping example

- Continued from the previous notes
- Current cache: 8-byte 2-way SA cache with line size of 2, and a 4-bit address

Tag	Set	Offset	Address Bits
$4 - 2 - 0 = 2$ bits	$\log_2 S = \log_2 2 = 1$ bit	$\log_2 LS = \log_2 2 = 1$ bit	= 4 bits

- Use same addresses and data from previous two examples

Address	Data
0110	0x1B
0111	0x59
1000	0xFE
1001	0x3D
1110	0x0C
1111	0x3A
1010	0x25
1011	0x98

- Load addresses into cache into same fashion

Memory Access	Tag	Set	Offset	Access Type	Data	Hit or Miss
0110						
1000						
1110						
1010						
1110						

- Place values from accesses into table below
 - How do we know which line in set 1 to evict?

Set	Line in Cache	Tag	Byte 0	Byte 1	Dirty
0	0				
	1				
1	2				
	3				

2. Cache replacement algorithms

- a. How do we evict lines from a given set for non-DM caches?
 - i. Why do we not need a replacement policy for DM caches?

3. Cache write policies

- a. Write-through

- b. Write-back