

### Configuration Information

- Discuss caches with properties ...
  - 32-bit addresses
  - 16-byte lines
  - 256-byte capacity
  - Memory references are either Read/Write

### Schematic Cache

0:				
1:				
2:				
3:				
4:				
5:				
6:				
7:				
8:				
9:				
A:				
B:				
C:				
D:				
E:				
F:				

### Schematic 2-Way Cache

0:							
1:							
2:							
3:							
4:							
5:							
6:							
7:							

### Generic Line



### Traces—Instructions 1

```

0xAA10 R
0xAA14 R
0xAA18 R
0xAA1C R
0xAA20 R
0xAA24 R
0xAA28 R
0xAA2C R
0xAA30 R
0xAA34 R
0xAA1C R
0xAA20 R
0xAA24 R
...
    
```

### Traces 2 (Conflicts)

```

0xAA10 R
0xAA14 R
0xAA18 R
0xAA1C R
0xBC60 R
0xAA20 R
0xAA24 R
0xDD40 R
0xFF90 R
0xAA28 R
0xAA2C R
0xAA30 R
0xCB68 R
    
```

### Traces 3 (Conflicts)

0xAA34 R  
0xAA1C R  
0xBC64 R  
0xAA20 R  
0xAA24 R  
0xDD44 R  
0xFF90 R  
0xAA28 R  
0xAA2C R  
0xAA30 R  
0xCB6C R  
...

### Traces 4 (Conflicts)

0xAA34 R  
0xAA1C R  
0xBC68 R  
0xAA20 R  
0xAA24 R  
0xDD48 R  
0xFF90 R  
0xAA28 R  
0xAA2C R  
0xAA30 R  
0xCB70 R

### Traces 5 (Conflicts)

0xAA1C R  
0xBC6A R  
0xAA20 R  
0xAA24 R  
0xDD4C R  
0xFF94 R  
0xAA28 R  
0xAA2C R  
0xAA30 R  
0xCB74 R  
...

### Traces 6 (Conflicts, Writes)

0xAA10 R  
0xAA14 R  
0xAA18 R  
0xAA1C R  
0xBC10 W  
0xAA20 R  
0xAA24 W  
0xDD40 R  
0xFF90 R  
0xCC28 W  
0xAA2C R  
0xAA30 R  
0xCB18 W  
...

### Traces 7 (Conflicts, Writes)

0xAA24 R  
0xAA1C R  
0xBC68 W  
0xAA20 R  
0xAA24 W  
0xDD48 R  
0xFF90 R  
0xCC28 R  
0xAA2C R  
0xAA30 R  
0xCB70 R  
...

### Traces 8 (Conflicts, Writes)

0xAA24 R  
0xAA1C R  
0xBC64 W  
0xAA20 R  
0xAA24 W  
0xDD44 R  
0xFF90 R  
0xCC28 R  
0xAA2C R  
0xAA30 R  
0xCB6C W  
...

### Direct Mapped Cache

0:		
1:		
2:		
3:		
4:		
5:		
6:		
7:		
8:		
9:		
A:		
B:		
C:		
D:		
E:		
F:		

### Direct Mapped Cache WB

0:			
1:			
2:			
3:			
4:			
5:			
6:			
7:			
8:			
9:			
A:			
B:			
C:			
D:			
E:			
F:			

### 2-Way Set Associative Cache

		:0:			
		:1:			
		:2:			
		:3:			
		:4:			
		:5:			
		:6:			
		:7:			

### 2-Way Set Associative Cache WB

				:0:			
				:1:			
				:2:			
				:3:			
				:4:			
				:5:			
				:6:			
				:7:			