

x86 Architecture

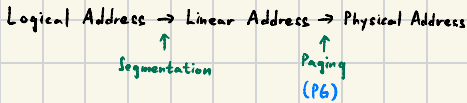
	Real Mode	Protect Mode	Virtual 8086 Mode	Address Bus	Data Bus	4-MB Page
8086	☆			20-bit	16-bit	
80286	☆	☆		24-bit	16-bit	
80386	☆	☆	☆	32-bit	32-bit	
Pentium	☆	☆	☆	32-bit	32-bit	☆
AMD64	☆	☆	☆	64-bit	64-bit	☆

↑ fixed segment
 ↑ with selector
 ↑ real code in protect mode

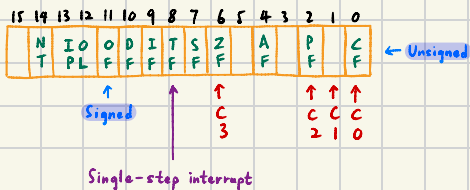
Control Register

CRO	PE = bit 0 Real or Protect Mode	CR4	PSE = bit 4 Page Size Extensions
	TS = bit 3 Task Switch		PAE = bit 5 Physical Address Extensions
	PG = bit 31 Paging		
CR2	last linear address caused page fault		
CR3	physical address of Page Directory Base		
↑	PDBR		

Memory Management



flags register



- CF Carry Flag A carry or borrow into the most significant bit.
- OF Overflow Flag The sum of two numbers with the same sign bits yields a number with opposite sign bit.
- AF Auxiliary Flag A carry or borrow with the least significant nibble.
- PF Parity Flag Whether the least significant byte contains even number of bits set.