

## x86-32 CPU Registers

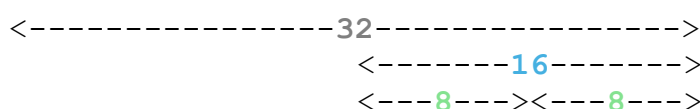
The Intel 80386, also known as the i386, is a fundamental processor in the history of the x86 architecture. It represents a turning point in the evolution of assembly programming because it is compatible with the original 8086 but incorporates a 32-bit architecture.



The i386 retains the instructions, registers, and real mode of the 8086, along with extended registers, new operating modes, and more advanced features.

i386-based processors operate with 32-bit words (4-Byte). Their internal registers are 32 bits wide. Their memory addresses are also limited to 32 bits, so they can only access 4 GB of RAM ( $2^{32}$  possible addresses).

### i386 registers



#### Main registers

EAX	AX	AH   AL	Accumulator
EBX	BX	BH   BL	Base
ECX	CX	CH   CL	Count
EDX	DX	DH   DL	Data

#### Index registers

ESI	SI	Source Index
EDI	DI	Destination Index

#### Stack pointers

ESP	SP	Stack Pointer
EBP	BP	Base Pointer

#### Program counter

EIP	IP	Instruction Pointer
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#### Segment selectors

	CS	Code Segment
	DS	Data Segment
	SS	Stack Segment
	ES	Extra Segment
	FS	F Segment
	GS	G Segment

#### Status register

EFLAGS	FLAGS	EFlags
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