

Registers

Below is a full list of ordinary x86 registers.

"Scratch" registers any function is allowed to overwrite, and use for anything you want.

"Preserved" registers have to be put back if you use them.

Name	Notes	Type	64-bit	32-bit	16-bit	8bit
rax	Values are returned from functions in this register	scratch	rax	eax	ax	ah and al
rbx		preserved	rbx	ebx	bx	bh and bl
rcx	Some instructions also use it as a counter	scratch	rcx	ecx	cx	ch and cl
rdx	Scratch register	scratch	rdx	edx	dx	dh and dl
rsp	The stack pointer. Points to the top of the stack	preserved	rsp	esp	sp	spl
rbp	Sometimes used to store the old value of the stack pointer, or the "base"	preserved	rbp	ebp	bp	bpl
rsi	Scratch register used to pass function argument #2 in 64-bit Linux. In 64-bit Windows, a preserved register.	Scratch	rsi	esi	si	sil
rdi	Scratch register and function argument #1 in 64-bit Linux. In 64-bit Windows, a preserved register.	scratch	rdi	edi	di	dil
r8		scratch	r8	r8d	r8w	r8b
r9		scratch	r9	r9d	r9w	r9b
r10		scratch	r10	r10d	r10w	r10b
r11		scratch	r11	r11d	r11w	r11b
r12		preserved	r12	r12d	r12w	r12b
r13		preserved	r13	r13d	r13w	r13b
r14		preserved	r14	r14d	r14w	r14b
r15		preserved	r15	r15d	r15w	r15b