

Register Usage

%rax	Return Value	%r8	5th Argument
%rbx	Callee Saved	%r9	6th Argument
%rcx	4th Argument	%r10	Caller Saved
%rdx	3th Argument	%r11	Caller Saved
%rsi	2nd Argument	%r12	Callee Saved
%rdi	1st Argument	%r13	Callee Saved
%rbp	Callee Saved	%r14	Callee Saved
%rsp	Stack Pointer	%r15	Callee Saved

Jumps

jmp	Label		Direct jump
jmp	*Operand		Indirect jump
je	Label	jz	Equal / zero
jne	Label	jnz	Not equal / not zero
js	Label		Negative
jns	Label		Nonnegative
jg	Label	jnl	Greater (signed >)
jge	Label	jnl	Greater or equal (signed >=)
jl	Label	jnge	Less (signed <)
jle	Label	jng	Less or equal (signed <=)
ja	Label	jnb	Above (unsigned >)
jae	Label	jnb	Above or equal (unsigned >=)
jb	Label	jnae	Below (unsigned <)
jbe	Label	jna	Below or equal (unsigned <=)

Integer Arithmetic

leaq	S,D	$D \leftarrow \&S$
incq	D	$D \leftarrow D + 1$
decq	D	$D \leftarrow D - 1$
negq	D	$D \leftarrow -D$
notq	D	$D \leftarrow \sim D$
addq	S,D	$D \leftarrow D + S$
subq	S,D	$D \leftarrow D - S$
imulq	S,D	$D \leftarrow D * S$
xorq	S,D	$D \leftarrow D \wedge S$
orq	S,D	$D \leftarrow D \vee S$
andq	S,D	$D \leftarrow D \& S$
salq	k,D	$D \ll_a k$
shlq	k,D	$D \ll_l k$
sarq	k,D	$D \gg_a k$
shrq	k,D	$D \gg_l k$

Stack Operations

pushq	S
popq	D

Tests

cmpq	S_1, S_2	$S_2 - S_1$
testq	S_1, S_2	$S_1 \& S_2$

Sets

sete	D	setz	Equal / zero
setne	D	setnz	Not equal / not zero
sets	D		Negative
setns	D		Nonnegative
setg	D	setnl	Greater (signed >)
setge	D	setnl	Greater or equal (signed >=)
setl	D	setnge	Less (signed <)
setle	D	setng	Less or equal (signed <=)
seta	D	setnbe	Above (unsigned >)
setae	D	setnb	Above or equal (unsigned >=)
setb	D	setnae	Below (unsigned <)
setbe	D	setna	Below or equal (unsigned <=)