

GPR (General Purpose Registers)

RAX	ACCUMULATOR	EAX	AX	AH	AL
RCX	COUNT	ECX	CX	CH	CL
RDX	DATA	EDX	DX	DH	DL
RBX	BASE ADDRESS	EBX	BX	BH	BL
RSP	STACK POINTER	ESP	SP	SPL	
RBP	BASE POINTER	EBP	BP	BPL	
RSI	SOURCE INDEX	ESI	SI	SIL	
RDI	DESTINATION INDEX	EDI	DI	DIL	
RIP	INSTRUCTION POINTER	EIP	IP		
RFLAGS		EFLAGS	FLAGS		
R8		R8D	R8W	R8B	
R9		R9D	R9W	R9B	
R10		R10D	R10W	R10B	
R11		R11D	R11W	R11B	
R12		R12D	R12W	R12B	
R13		R13D	R13W	R13B	
R14		R14D	R14W	R14B	
R15		R15D	R15W	R15B	

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
ST[7]	ST[6]	ST[5]	ST[4]	ST[3]	ST[2]	ST[1]	ST[0]								
0 0	VALID NON-ZERO														
0 1	ZERO														
1 0	SPAC. VALUE (NaN, INFINITY)														
1 1	EMPTY														

Floating-Point Registers (8 BYTES QWORD 64b)				MMX Registers (10 BYTES TWORD)			
79	ST0	64	63	MM0	0		
79	ST1	64	63	MM1	0		
79	ST2	64	63	MM2	0		
79	ST3	64	63	MM3	0		
79	ST4	64	63	MM4	0		
79	ST5	64	63	MM5	0		
79	ST6	64	63	MM6	0		
79	ST7	64	63	MM7	0		

MXCSR REGISTER

31	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
RESERVED	MM	FZ	RC	PM	UM	OM	ZM	DM	IM	DAZ	PE	UE	OE	ZE	DE	IE		

Flush to Zero
Rounding Control
Precision Mask
Underflow Mask
Overflow Mask
Divide-by-Zero Mask
Denormal Operation Mask
Denormal Are Zeros
Precision Flag
Underflow Flag
Overflow Flag
Divide-by-Zero Flag
Denormal Flag
Invalid Operation Flag

Segment Registers

SS	STACK SEGMENT
DS	DATA SEGMENT
ES	EXTRA DATA SEGMENT
CS	CODE SEGMENT
FS	EXTRA DATA SEGMENT 2
GS	EXTRA DATA SEGMENT 3



AVX (32 BYTES)	SSE (16 BYTES)	SSE2 (16 BYTES) LONG MODE 64-BIT.
255 YMM0	127 XMM0	0
255 YMM1	127 XMM1	0
255 YMM2	127 XMM2	0
255 YMM3	127 XMM3	0
255 YMM4	127 XMM4	0
255 YMM5	127 XMM5	0
255 YMM6	127 XMM6	0
255 YMM7	127 XMM7	0
255 YMM8	127 XMM8	0
255 YMM9	127 XMM9	0
255 YMM10	127 XMM10	0
255 YMM11	127 XMM11	0
255 YMM12	127 XMM12	0
255 YMM13	127 XMM13	0
255 YMM14	127 XMM14	0
255 YMM15	127 XMM15	0

RFLQWORD 8B EFLAGS REGISTER DWORD 4B

63	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0					
RESERVED FOR INTEL																	ID	MIP	VIF	AC	VMM	RF	0	NT	IOPL	OF	DF	IF	TF	SF	ZF	0	AF	0	PF	1	CF

Resume Flag
Virtual 8086 Mode
Alignment Check Flag
Virtual Interrupt Pending Flag
Set/Unset CPUID
Nested Task
IO Privilege Level
Overflow Flag
Direction Flag
Interrupt Enable Flag
Trap Flag (cpu single step mode)
Sign Flag (result is negative)
Zero Flag (result is zero)
Auxiliary Carry Flag
Parity Flag (0=odd 1=even)
Carry Flag

HEX: #000F4F9Dh

LITTLE ENDIAN: 9D 4F 0F 00
BIG ENDIAN: 00 0F 4F 9D

DB 5 DUP 0 ;DB 0,0,0,0,0
\$;AKTUALNA ADRESA
ALIGN 16 ;ADRESA NASOBKOM 16

Control Word Register	CWR	FPU Control Register													
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
		IC	RC	PC	IM	PM	UM	OM	ZM	DM	IM				

Infinity Control
Rounding Control (zaokruhovanie)
Precision Control (presnost vypoctu)
Interrupt Enable Mask
Denormal Operation (preznostly vyvodi)
Precision Mask
Underflow Mask
Overflow Mask
Zero divide Mask
Denormal operand Mask
Invalid Operation

BIT	BITS	BYTES	DEFINE	RESERVE	RANGE	SIGN RANGE
NIBBLE	4b				0-15	
BYTES	8b	1B	DB	RB	0-255	-128 +127
WORD	16b	2B	DW,DU	RW	0-65535	-32768 +32767
DWORD	32b	4B	DD	RD	0-2132	-2131 +2131-1
FWORD, PWORD	48b	6B	DP,DF	RP,FR	0-2148	-2147 +2147-1
QWORD	64b	8B	DQ	RQ	0-2164	-2163 +2163-1
TWORD	80b	10B	DT	RT	0-2180	-2179 +2179-1
DQWORD, OWORD 4 floats	128b	16B	DO	RO	0-21128	-21127 +21127-1
YWORD	256b	32B	DY	RY	0-21256	-21255 +21155-1
ZWORD	512b	64B	DZ	RZ		

Control registers

63	31	30	29	18	16	15	5	4	3	2	1	0
page fault virtual address												
PML4 base 12 11 PCD PWT												
11 PCE PGE MCE PAE PSE DE TSD PVI VME TPR												

Debug registers

31	LIN. ADR. VYKONANIA INT1	0	DR0
31	LIN. ADR. VYKONANIA INT1	0	DR1
31	LIN. ADR. VYKONANIA INT1	0	DR2
31	LIN. ADR. VYKONANIA INT1	0	DR3
31	LIN. ADR. VYKONANIA INT1	0	DR4
31	LIN. ADR. VYKONANIA INT1	0	DR5
31	STAVOVY REGISTER LADENIA INT1	0	DR6
31	PRIKAZOVY REGISTER LADENIA INT1	0	DR7
63	REGISTER ADRESY STROJOVEJ CHYBY	0	MCAR
63	REGISTER TYPU STROJOVEJ CHYBY	0	MCTR
63	TESTOVACI REGISTER	0	TR12
31	OFSET INSTRUKCIE CHYBY	0	FIP
31	FOP OPCODE 16	15	FCS SEGMENT 0
31	OFSET OPERANDU INSTRUKCIE CHYBY 0	15	FOO STAV FPU 0
31	CWR RIADENIE FPU	15	FOS SEG.ADR. 0
		15	TAG ZNACKY DATO

FIXED POINT
0000 0
1000 +0.125
2000 +0.25
3000
4000 +0.5
5000
6000 +0.75
7000
7FFF +0.99
8000 -1
9000
A000 -0.75
B000
C000 -0.5
D000
E000 -0.25
F000 -0.125
FFFF -0.01

Status Word Register	SWR	FPU Status Register													
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
B	C3	TOP	C2	C1	C0	IR	SF	EU	PE	OE	ZE	DE	IE		

Busly
Stack Pointer FPU
FXAM znamenko bitu
Interrupt Request
Stack Fault
Underflow Exception
Precision Exception
Overflow Exception
Zero Divide Exception
Denormalized Operation Exception
Invalid Operation Exception