

Instruction Set

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Introduction

- Data Transfer Instructions
- Arithmetic instructions
- Bit manipulation instructions
- String instructions
- Program Execution transfer instructions
- Processor control instructions

Data Transfer Instructions

- General Purpose byte or word transfer instructions
- Simple input and output port transfer instructions
- Special address transfer instructions
- Flag transfer instructions

General Purpose byte or word transfer instructions

- MOV
- PUSH
- POP
- PUSHA
- POPA
- XCHG
- XLAT

Simple input and output port transfer instructions

- IN
- OUT

Special address transfer instructions

- LEA
- LDS
- LES

Flag transfer instructions

- LAHF
- SAHF
- PUSHF
- POPF

Arithmetic Instructions

- Addition instructions
- Subtraction instructions
- Multiplication instructions
- Division instructions

Addition Instructions

- ADD
- ADC
- INC
- AAA
- DAA

Subtraction Instructions

- SUB
- SBB
- DEC
- NEG
- CMP
- AAS
- DAS

Multiplication and Division Instructions

- MUL
- IMUL
- AAM
- DIV
- IDIV
- AAD
- CBW
- CWD

Bit manipulation Instructions

- Logical instructions
- Shift instructions
- Rotate instructions

Logical Instructions

- NOT
- AND
- OR
- XOR
- TEST

Shift Instructions

- SHL/SAL
- SHR
- SAR

Rotate Instructions

- ROL
- ROR
- RCL
- RCR

String Manipulation Instructions

- REP
- REPE/REPZ
- REPNE/REPNZ
- MOVS/MOVS/MOVSW
- COMPS/COMPSB/COMPSW
- INS/INSB/INSW
- OUTS/OUTSB/OUTSW
- SCAS/SCASB/SCASW
- LODS/LODSB/LODSW
- STOS/STOSB/STOSW

Program Execution transfer Instructions

- Unconditional transfer instructions
- Conditional transfer instructions
- Iteration control instructions
- Interrupt instructions
- High-level language interface instructions

Unconditional transfer Instructions

- CALL
- RET
- JMP

Conditional transfer Instructions

- JA/JNBE
- JAE/JNB
- JB/JNAE
- JBE/JNA
- JC
- JE/JZ
- JNO
- JNC
- JO
- JS
- JNE/JNZ
- JNS
- JP/JPE
- JNP/JPO

Iteration control Instructions

- LOOP
- LOOPE/LOOPZ
- LOOPNE/LOOPNZ
- JCXZ

Interrupt Instructions

- INT
- INTO
- IRET

High-level language interface Instructions

- INT
- INTO
- IRET

Processor control Instructions

Flog set/clear Instructions

- STC
- CLC
- CMC
- STD
- CLD
- STI
- CLI

External hardware synchronization Instructions

- HLT
- WAIT
- ESC
- LOCK

No operation Instructions

- NOP