



# Instruction Set

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**Version:** 0.5.0

**Total Instructions Supported:** 73

**Operand Size:** Up to 2 operands, each of 64-bits

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## Operand Types

Instructions in SASM accept a variety of operand types:

??? example "Immediate Values"

0, 1, 2, 3

??? example "Constants"

M, N, O, P

??? example "Registers"

L0, L1, L2, L3

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## Register Dereferencing

SASM registers are identified by **unique IDs**. Each register can be accessed either as a **reference** or as a **value** using *compile-time functions*.

```
ref(L1) ; reference to register L1
val(L1) ; value stored in register L1
```

These are **compile-time functions** that tell the assembler how to interpret operands.

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## Related References

- [Compile-time Functions](#)
- [Register Reference](#)

INSTRUCTIONS NOT DOCUMENTED:

INST\_DONOP,  
INST\_INVOK,  
INST\_RETVL,  
INST\_PUSHR,  
INST\_SPOPR,  
INST\_SHUTS,  
INST\_SETR,  
INST\_GETR,  
INST\_CALL,  
INST\_LOOP,  
INST\_PUSH,  
INST\_SPOP,  
INST\_SWAP,

INST\_JMPU,  
INST\_JMPC,  
INST\_ANDB,  
INST\_NOTB,  
INST\_COPY,  
INST\_DUPS,  
INST\_RET,  
INST\_NOT,  
INST\_EQI,  
INST\_GEI,  
INST\_GTI,  
INST\_LEI,  
INST\_LTI,  
INST\_NEI,  
INST\_EQU,  
INST\_GEU,  
INST\_GTU,  
INST\_LEU,  
INST\_LTU,  
INST\_NEU,  
INST\_EQF,  
INST\_GEF,  
INST\_GTF,  
INST\_LEF,  
INST\_LTF,  
INST\_NEF,  
INST\_ORB,  
INST\_XOR,  
INST\_SHR,  
INST\_SHL,  
INST\_I2F,  
INST\_U2F,  
INST\_F2I,  
INST\_F2U,  
INST\_READ1U,  
INST\_READ2U,  
INST\_READ4U,

```
INST_READ8U,  
INST_READ1I,  
INST_READ2I,  
INST_READ4I,  
INST_READ8I,  
INST_WRITE1,  
INST_WRITE2,  
INST_WRITE4,  
INST_WRITE8,
```