

NZCV, Condition Flags

The NZCV characteristics are:

Purpose

Allows access to the condition flags.

Configuration

There are no configuration notes.

Attributes

NZCV is a 64-bit register.

Field descriptions

63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32
RES0																															
N	Z	C	V	RES0																											
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

Bits [63:32]

Reserved, res0.

N, bit [31]

Negative condition flag. Set to 1 if the result of the last flag-setting instruction was negative.

Z, bit [30]

Zero condition flag. Set to 1 if the result of the last flag-setting instruction was zero, and to 0 otherwise. A result of zero often indicates an equal result from a comparison.

C, bit [29]

Carry condition flag. Set to 1 if the last flag-setting instruction resulted in a carry condition, for example an unsigned overflow on an addition.

V, bit [28]

Overflow condition flag. Set to 1 if the last flag-setting instruction resulted in an overflow condition, for example a signed overflow on an addition.

Bits [27:0]

Reserved, res0.

Accessing NZCV

Accesses to this register use the following encodings in the System register encoding space:

MRS <Xt>, NZCV

op0	op1	CRn	CRm	op2
0b11	0b011	0b0100	0b0010	0b000

```
if PSTATE.EL == EL0 then
    X[t, 64] = Zeros(32):PSTATE.<N,Z,C,V>:Zeros(28);
elsif PSTATE.EL == EL1 then
    X[t, 64] = Zeros(32):PSTATE.<N,Z,C,V>:Zeros(28);
elsif PSTATE.EL == EL2 then
    X[t, 64] = Zeros(32):PSTATE.<N,Z,C,V>:Zeros(28);
elsif PSTATE.EL == EL3 then
    X[t, 64] = Zeros(32):PSTATE.<N,Z,C,V>:Zeros(28);
```

MSR NZCV, <Xt>

op0	op1	CRn	CRm	op2
0b11	0b011	0b0100	0b0010	0b000

```
if PSTATE.EL == EL0 then
    PSTATE.<N,Z,C,V> = X[t, 64]<31:28>;
elsif PSTATE.EL == EL1 then
    PSTATE.<N,Z,C,V> = X[t, 64]<31:28>;
elsif PSTATE.EL == EL2 then
    PSTATE.<N,Z,C,V> = X[t, 64]<31:28>;
elsif PSTATE.EL == EL3 then
    PSTATE.<N,Z,C,V> = X[t, 64]<31:28>;
```

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