TCO, Tag Check Override

The TCO characteristics are:

Purpose

When FEAT_MTE is implemented, this register allows tag checks to be disabled globally.

When FEAT_MTE2 is not implemented, it is constrained unpredictable whether this register is res0 or behaves as if FEAT_MTE2 is implemented.

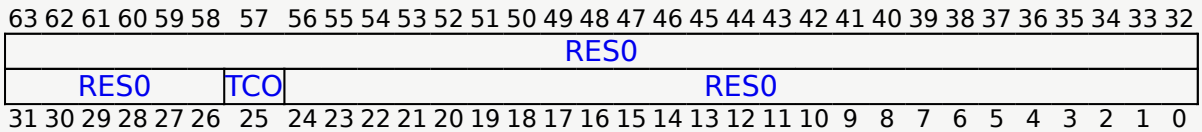
Configuration

This register is present only when FEAT_MTE is implemented. Otherwise, direct accesses to TCO are undefined.

Attributes

TCO is a 64-bit register.

Field descriptions



Bits [63:26]

Reserved, res0.

TCO, bit [25]

Allows memory tag checks to be globally disabled.

TCO	Meaning
0b0	Loads and Stores are not affected by this control.
0b1	Loads and Stores are unchecked.

Bits [24:0]

Reserved, res0.

Accessing TCO

For information about the operation of the MSR (immediate) accessor, see MSR (immediate).

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

MRS <Xt>, TCO

op0	op1	CRn	CRm	op2
0b11	0b011	0b0100	0b0010	0b111

```
if PSTATE.EL == EL0 then
    X[t, 64] = Zeros(38):PSTATE.TCO:Zeros(25);
elsif PSTATE.EL == EL1 then
    X[t, 64] = Zeros(38):PSTATE.TCO:Zeros(25);
elsif PSTATE.EL == EL2 then
    X[t, 64] = Zeros(38):PSTATE.TCO:Zeros(25);
elsif PSTATE.EL == EL3 then
    X[t, 64] = Zeros(38):PSTATE.TCO:Zeros(25);
```

MSR TCO, <Xt>

op0	op1	CRn	CRm	op2
0b11	0b011	0b0100	0b0010	0b111

```
if PSTATE.EL == EL0 then
    PSTATE.TCO = X[t, 64]<25>;
elsif PSTATE.EL == EL1 then
    PSTATE.TCO = X[t, 64]<25>;
elsif PSTATE.EL == EL2 then
    PSTATE.TCO = X[t, 64]<25>;
elsif PSTATE.EL == EL3 then
    PSTATE.TCO = X[t, 64]<25>;
```

MSR TCO, #<imm>

op0	op1	CRn	op2
0b00	0b011	0b0100	0b100

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