CCSIDR2_EL1, Current Cache Size ID Register 2

The CCSIDR2_EL1 characteristics are:

Purpose

Provides the information about the architecture of the currently selected cache from bits[63:32] of CCSIDR_EL1.

Configuration

AArch64 System register CCSIDR2_EL1 bits [31:0] are architecturally mapped to AArch32 System register CCSIDR2[31:0].

This register is present only when FEAT_CCIDX is implemented. Otherwise, direct accesses to CCSIDR2_EL1 are undefined.

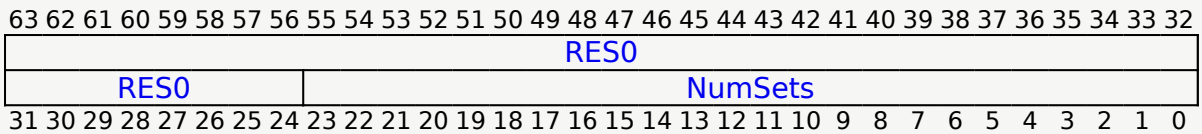
In an implementation which does not support AArch32 at EL1, it is implementation defined whether reading this register gives an unknown value or is undefined.

The implementation includes one CCSIDR2_EL1 for each cache that it can access. CSSELR_EL1 selects which Cache Size ID Register is accessible.

Attributes

CCSIDR2_EL1 is a 64-bit register.

Field descriptions



Bits [63:24]

Reserved, res0.

NumSets, bits [23:0]

(Number of sets in cache) - 1, therefore a value of 0 indicates 1 set in the cache. The number of sets does not have to be a power of 2.

Accessing CCSIDR2_EL1

If CSSELR_EL1.{TnD, Level, InD} is programmed to a cache level that is not implemented, then on a read of the CCSIDR2_EL1 the behavior is constrained unpredictable, and can be one of the following:

- The CCSIDR2_EL1 read is treated as NOP.
- The CCSIDR2_EL1 read is undefined.
- The CCSIDR2_EL1 read returns an unknown value.

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

MRS <Xt>, CCSIDR2_EL1

op0	op1	CRn	CRm	op2
0b11	0b001	0b0000	0b0000	0b010

```
if PSTATE.EL == EL0 then
    if IsFeatureImplemented(FEAT_IDST) then
        if EL2Enabled() && HCR_EL2.TGE == '1' then
            AArch64.SystemAccessTrap(EL2, 0x18);
        else
            AArch64.SystemAccessTrap(EL1, 0x18);
    else
        UNDEFINED;
elsif PSTATE.EL == EL1 then
    if EL2Enabled() && HCR_EL2.TID2 == '1' then
        AArch64.SystemAccessTrap(EL2, 0x18);
    elsif EL2Enabled() && HCR_EL2.TID4 == '1' then
        AArch64.SystemAccessTrap(EL2, 0x18);
    else
        X[t, 64] = CCSIDR2_EL1;
elsif PSTATE.EL == EL2 then
    X[t, 64] = CCSIDR2_EL1;
elsif PSTATE.EL == EL3 then
    X[t, 64] = CCSIDR2_EL1;
```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