ERXCTLR_EL1, Selected Error Record Control Register

The ERXCTLR_EL1 characteristics are:

Purpose

Accesses ERR<n>CTLR for the error record <n> selected by ERRSELR_EL1.SEL.

Configuration

AArch64 System register ERXCTLR_EL1 bits [31:0] are architecturally mapped to AArch32 System register ERXCTLR[31:0].

AArch64 System register ERXCTLR_EL1 bits [63:32] are architecturally mapped to AArch32 System register ERXCTLR2[31:0].

This register is present only when FEAT_RAS is implemented. Otherwise, direct accesses to ERXCTLR_EL1 are undefined.

Attributes

ERXCTLR_EL1 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
ERR<n>CTLR
ERR<n>CTLR
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 [63:0]

ERXCTLR_EL1 accesses ERR<n>CTLR, where <n> is the value in ERRSELR_EL1.SEL.

Accessing ERXCTLR_EL1

If ERRIDR_EL1.NUM is `0x0000` or ERRSELR_EL1.SEL is greater than or equal to ERRIDR_EL1.NUM, then one of the following occurs:

- An unknown error record is selected.
- ERXCTLR_EL1 is RAZ/WI.
- Direct reads and writes of ERXCTLR_EL1 are NOPs.
- Direct reads and writes of ERXCTLR_EL1 are undefined.

If ERRSELR_EL1.SEL is not the index of the first error record owned by a node, then ERR<n>CTLR is not present, meaning reads and writes of ERXCTLR_EL1 are res0.

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

MRS <Xt>, ERXCTLR_EL1

op0	op1	CRn	CRm	op2
0b11	0b000	0b0101	0b0100	0b001

```
if PSTATE.EL == EL0 then
    UNDEFINED;
elsif PSTATE.EL == EL1 then
    if Halted() && HaveEL(EL3) && EDSCR.SDD == '1'
&& boolean IMPLEMENTATION_DEFINED "EL3 trap priority
when SDD == '1'" && SCR_EL3.TERR == '1' then
        UNDEFINED;
    elsif EL2Enabled() && HCR_EL2.TERR == '1' then
        AArch64.SystemAccessTrap(EL2, 0x18);
    elsif EL2Enabled() &&
IsFeatureImplemented(FEAT_FGT) && (!HaveEL(EL3) ||
SCR_EL3.FGTEn == '1') && HFGRTR_EL2.ERXCTLR_EL1 ==
'1' then
        AArch64.SystemAccessTrap(EL2, 0x18);
    elsif HaveEL(EL3) && SCR_EL3.TERR == '1' then
        if Halted() && EDSCR.SDD == '1' then
            UNDEFINED;
        else
            AArch64.SystemAccessTrap(EL3, 0x18);
    else
        X[t, 64] = ERXCTLR_EL1;
elsif PSTATE.EL == EL2 then
    if Halted() && HaveEL(EL3) && EDSCR.SDD == '1'
&& boolean IMPLEMENTATION_DEFINED "EL3 trap priority
when SDD == '1'" && SCR_EL3.TERR == '1' then
        UNDEFINED;
    elsif HaveEL(EL3) && SCR_EL3.TERR == '1' then
        if Halted() && EDSCR.SDD == '1' then
            UNDEFINED;
        else
            AArch64.SystemAccessTrap(EL3, 0x18);
    else
        X[t, 64] = ERXCTLR_EL1;
elsif PSTATE.EL == EL3 then
    X[t, 64] = ERXCTLR_EL1;
```

MSR ERXCTLR_EL1, <Xt>

op0	op1	CRn	CRm	op2
0b11	0b000	0b0101	0b0100	0b001

```
if PSTATE.EL == EL0 then
    UNDEFINED;
elsif PSTATE.EL == EL1 then
    if Halted() && HaveEL(EL3) && EDSCR.SDD == '1'
&& boolean IMPLEMENTATION_DEFINED "EL3 trap priority
when SDD == '1'" && SCR_EL3.TERR == '1' then
        UNDEFINED;
    elsif Halted() && HaveEL(EL3) && EDSCR.SDD ==
'1' && boolean IMPLEMENTATION_DEFINED "EL3 trap
priority when SDD == '1'" && SCR_EL3.TWERR == '1'
then
        UNDEFINED;
    elsif EL2Enabled() && HCR_EL2.TERR == '1' then
        AArch64.SystemAccessTrap(EL2, 0x18);
    elsif EL2Enabled() &&
IsFeatureImplemented(FEAT_FGT) && (!HaveEL(EL3) ||
SCR_EL3.FGTEn == '1') && HFGWTR_EL2.ERXCTLR_EL1 ==
'1' then
        AArch64.SystemAccessTrap(EL2, 0x18);
    elsif HaveEL(EL3) && SCR_EL3.TERR == '1' then
        if Halted() && EDSCR.SDD == '1' then
            UNDEFINED;
        else
            AArch64.SystemAccessTrap(EL3, 0x18);
    elsif HaveEL(EL3) && SCR_EL3.TWERR == '1' then
        if Halted() && EDSCR.SDD == '1' then
            UNDEFINED;
        else
            AArch64.SystemAccessTrap(EL3, 0x18);
    else
        ERXCTLR_EL1 = X[t, 64];
elsif PSTATE.EL == EL2 then
    if Halted() && HaveEL(EL3) && EDSCR.SDD == '1'
&& boolean IMPLEMENTATION_DEFINED "EL3 trap priority
when SDD == '1'" && SCR_EL3.TERR == '1' then
        UNDEFINED;
    elsif Halted() && HaveEL(EL3) && EDSCR.SDD ==
'1' && boolean IMPLEMENTATION_DEFINED "EL3 trap
priority when SDD == '1'" && SCR_EL3.TWERR == '1'
then
        UNDEFINED;
    elsif HaveEL(EL3) && SCR_EL3.TERR == '1' then
        if Halted() && EDSCR.SDD == '1' then
            UNDEFINED;
        else
            AArch64.SystemAccessTrap(EL3, 0x18);
    elsif HaveEL(EL3) && SCR_EL3.TWERR == '1' then
        if Halted() && EDSCR.SDD == '1' then
            UNDEFINED;
        else
            AArch64.SystemAccessTrap(EL3, 0x18);
```

```
        else
            ERXCTLR_EL1 = X[t, 64];
    elsif PSTATE.EL == EL3 then
        ERXCTLR_EL1 = X[t, 64];
```

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