TRCCLAIMSET, Claim Tag Set Register

The TRCCLAIMSET characteristics are:

Purpose

In conjunction with TRCCLAIMCLR, provides Claim Tag bits that can be separately set and cleared to indicate whether functionality is in use by a debug agent.

For additional information, see the CoreSight Architecture Specification.

Configuration

AArch64 System register TRCCLAIMSET bits [31:0] are architecturally mapped to External register TRCCLAIMSET[31:0].

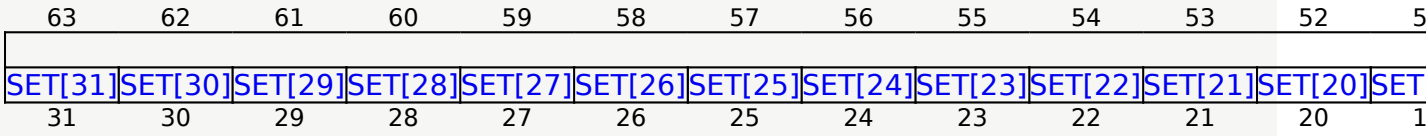
This register is present only when FEAT_ETE is implemented and FEAT_TRC_SR is implemented. Otherwise, direct accesses to TRCCLAIMSET are undefined.

The number of claim tag bits implemented is implementation defined. Arm recommends that implementations support a minimum of four claim tag bits, that is, SET[3:0] reads as `0b1111`.

Attributes

TRCCLAIMSET is a 64-bit register.

Field descriptions



Bits [63:32]

Reserved, res0.

SET[<m>], bit [m], for m = 31 to 0

Claim Tag Set. Indicates whether Claim Tag bit <m> is implemented, and is used to set Claim Tag bit <m> to 1.

SET[<m>]	Meaning

0b0	On a read: Claim Tag bit <m> is not implemented. On a write: Ignored.
0b1	On a read: Claim Tag bit <m> is implemented. On a write: Set Claim Tag bit <m> to 1.

This bit reads-as-zero and ignores writes if m > the number of Claim Tag bits.

Access to this field is **RAO/W1S**.

Accessing TRCCLAIMSET

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

MRS <Xt>, TRCCLAIMSET

op0	op1	CRn	CRm	op2
0b10	0b001	0b0111	0b1000	0b110

```
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'" && CPTR_EL3.TTA == '1' then
        UNDEFINED;
    elsif CPACR_EL1.TTA == '1' then
        AArch64.SystemAccessTrap(EL1, 0x18);
    elsif EL2Enabled() && CPTR_EL2.TTA == '1' then
        AArch64.SystemAccessTrap(EL2, 0x18);
    elsif EL2Enabled() &&
IsFeatureImplemented(FEAT_FGT) && (!HaveEL(EL3) ||
SCR_EL3.FGTEn == '1') && HDFGRTR_EL2.TRCCLAIM == '1'
then
        AArch64.SystemAccessTrap(EL2, 0x18);
    elsif HaveEL(EL3) && CPTR_EL3.TTA == '1' then
        if Halted() && EDSCR.SDD == '1' then
            UNDEFINED;
        else
            AArch64.SystemAccessTrap(EL3, 0x18);
    else
        X[t, 64] = TRCCLAIMSET;
elsif PSTATE.EL == EL2 then
    if Halted() && HaveEL(EL3) && EDSCR.SDD == '1'
&& boolean IMPLEMENTATION_DEFINED "EL3 trap priority
when SDD == '1'" && CPTR_EL3.TTA == '1' then
        UNDEFINED;
```

```
    elsif CPTR_EL2.TTA == '1' then
        AArch64.SystemAccessTrap(EL2, 0x18);
    elsif HaveEL(EL3) && CPTR_EL3.TTA == '1' then
        if Halted() && EDSCR.SDD == '1' then
            UNDEFINED;
        else
            AArch64.SystemAccessTrap(EL3, 0x18);
    else
        X[t, 64] = TRCCLAIMSET;
elsif PSTATE.EL == EL3 then
    if CPTR_EL3.TTA == '1' then
        AArch64.SystemAccessTrap(EL3, 0x18);
    else
        X[t, 64] = TRCCLAIMSET;
```

MSR TRCCLAIMSET, <Xt>

op0	op1	CRn	CRm	op2
0b10	0b001	0b0111	0b1000	0b110

```
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'" && CPTR_EL3.TTA == '1' then
        UNDEFINED;
    elsif CPACR_EL1.TTA == '1' then
        AArch64.SystemAccessTrap(EL1, 0x18);
    elsif EL2Enabled() && CPTR_EL2.TTA == '1' then
        AArch64.SystemAccessTrap(EL2, 0x18);
    elsif EL2Enabled() &&
IsFeatureImplemented(FEAT_FGT) && (!HaveEL(EL3) ||
SCR_EL3.FGTEn == '1') && HDFGWTR_EL2.TRCCLAIM == '1'
then
        AArch64.SystemAccessTrap(EL2, 0x18);
    elsif HaveEL(EL3) && CPTR_EL3.TTA == '1' then
        if Halted() && EDSCR.SDD == '1' then
            UNDEFINED;
        else
            AArch64.SystemAccessTrap(EL3, 0x18);
    else
        TRCCLAIMSET = X[t, 64];
elsif PSTATE.EL == EL2 then
    if Halted() && HaveEL(EL3) && EDSCR.SDD == '1'
&& boolean IMPLEMENTATION_DEFINED "EL3 trap priority
when SDD == '1'" && CPTR_EL3.TTA == '1' then
        UNDEFINED;
    elsif CPTR_EL2.TTA == '1' then
        AArch64.SystemAccessTrap(EL2, 0x18);
    elsif HaveEL(EL3) && CPTR_EL3.TTA == '1' then
        if Halted() && EDSCR.SDD == '1' then
            UNDEFINED;
```

```
            else
                AArch64.SystemAccessTrap(EL3, 0x18);
        else
            TRCCLAIMSET = X[t, 64];
    elsif PSTATE.EL == EL3 then
        if CPTR_EL3.TTA == '1' then
            AArch64.SystemAccessTrap(EL3, 0x18);
        else
            TRCCLAIMSET = X[t, 64];
```

28/03/2023 16:02; 72747e43966d6b97dcbd230a1b3f0421d1ea3d94