

BRB INJ, Branch Record Injection into the Branch Record Buffer

The BRB INJ characteristics are:

Purpose

Injects the Branch Record held in [BRBINFINJ_EL1](#), [BRBSRCINJ_EL1](#), and [BRBTGTINJ_EL1](#) into the Branch Record Buffer.

Configuration

This instruction is present only when FEAT_BRBE is implemented. Otherwise, direct accesses to BRB INJ are undefined.

Attributes

BRB INJ is a 64-bit System instruction.

Field descriptions

This instruction has no applicable fields.

The value in the register specified by <Xt> is ignored.

Executing BRB INJ

Rt should be encoded as 0b11111. If the Rt field is not set to 0b11111, it is constrained unpredictable whether:

- The instruction is undefined.
- The instruction behaves as if the Rt field is set to 0b11111.

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

BRB INJ

op0	op1	CRn	CRm	op2
0b01	0b001	0b0111	0b0010	0b101

```

if PSTATE.EL == EL0 then
    UNDEFINED;
elseif PSTATE.EL == EL1 then
    if Halted() && HaveEL(EL3) && EDSCR.SDD == '1'
    && boolean IMPLEMENTATION_DEFINED "EL3 trap priority
    when SDD == '1'" && MDCR_EL3.SBRBE != '11' &&
    SCR_EL3.NS == '0' then
        UNDEFINED;
    elseif Halted() && HaveEL(EL3) && EDSCR.SDD ==
    '1' && boolean IMPLEMENTATION_DEFINED "EL3 trap
    priority when SDD == '1'" && MDCR_EL3.SBRBE == 'x0'
    && SCR_EL3.NS == '1' then
        UNDEFINED;
    elseif EL2Enabled() &&
    IsFeatureImplemented(FEAT_FGT) && (!HaveEL(EL3) ||
    SCR_EL3.FGTEn == '1') && HFGITR_EL2.nBRBINJ == '0'
    then
        AArch64.SystemAccessTrap(EL2, 0x18);
    elseif HaveEL(EL3) && MDCR_EL3.SBRBE != '11' &&
    SCR_EL3.NS == '0' then
        if Halted() && EDSCR.SDD == '1' then
            UNDEFINED;
        else
            AArch64.SystemAccessTrap(EL3, 0x18);
        elseif HaveEL(EL3) && MDCR_EL3.SBRBE == 'x0' &&
    SCR_EL3.NS == '1' then
            if Halted() && EDSCR.SDD == '1' then
                UNDEFINED;
            else
                AArch64.SystemAccessTrap(EL3, 0x18);
        else
            BRB_INJ();
    elseif PSTATE.EL == EL2 then
        if Halted() && HaveEL(EL3) && EDSCR.SDD == '1'
        && boolean IMPLEMENTATION_DEFINED "EL3 trap priority
        when SDD == '1'" && MDCR_EL3.SBRBE != '11' &&
        SCR_EL3.NS == '0' then
            UNDEFINED;
        elseif Halted() && HaveEL(EL3) && EDSCR.SDD ==
        '1' && boolean IMPLEMENTATION_DEFINED "EL3 trap
        priority when SDD == '1'" && MDCR_EL3.SBRBE == 'x0'
        && SCR_EL3.NS == '1' then
            UNDEFINED;
        elseif HaveEL(EL3) && MDCR_EL3.SBRBE != '11' &&
        SCR_EL3.NS == '0' then
            if Halted() && EDSCR.SDD == '1' then
                UNDEFINED;
            else
                AArch64.SystemAccessTrap(EL3, 0x18);
        elseif HaveEL(EL3) && MDCR_EL3.SBRBE == 'x0' &&
        SCR_EL3.NS == '1' then
            if Halted() && EDSCR.SDD == '1' then
                UNDEFINED;
            else
                AArch64.SystemAccessTrap(EL3, 0x18);
        else
            BRB_INJ();
    elseif PSTATE.EL == EL3 then

```

```
BRB_INJ ( ) ;
```

[AArch32
Registers](#)[AArch64
Registers](#)[AArch32
Instructions](#)[AArch64
Instructions](#)[Index by
Encoding](#)[External
Registers](#)

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