BRB IALL, Invalidate the Branch Record Buffer

The BRB IALL characteristics are:

Purpose

Invalidates all Branch records in the Branch Record Buffer.

Configuration

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

Attributes

BRB IALL 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 IALL

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 IALL

op0	op1	CRn	CRm	op2
0b01	0b001	0b0111	0b0010	0b100

```
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'" && MDCR_EL3.SBRBE != '11' &&
SCR_EL3.NS == '0' then
        UNDEFINED;
    elsif 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;
    elsif EL2Enabled() &&
IsFeatureImplemented(FEAT_FGT) && (!HaveEL(EL3) ||
SCR_EL3.FGTEn == '1') && HFGITR_EL2.nBRBIALL == '0'
then
        AArch64.SystemAccessTrap(EL2, 0x18);
    elsif HaveEL(EL3) && MDCR_EL3.SBRBE != '11' &&
SCR_EL3.NS == '0' then
        if Halted() && EDSCR.SDD == '1' then
            UNDEFINED;
        else
            AArch64.SystemAccessTrap(EL3, 0x18);
    elsif 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_IALL();
elsif 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;
    elsif 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;
    elsif HaveEL(EL3) && MDCR_EL3.SBRBE != '11' &&
SCR_EL3.NS == '0' then
        if Halted() && EDSCR.SDD == '1' then
            UNDEFINED;
        else
            AArch64.SystemAccessTrap(EL3, 0x18);
    elsif 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_IALL();
elsif PSTATE.EL == EL3 then
    BRB_IALL();
```

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