
GCSPOPCX, Guarded Control Stack Pop and Compare exception return record

The GCSPOPCX characteristics are:

Purpose

Loads an exception return record from the location indicated by the current Guarded control stack pointer register, compares the values loaded with the current ELR_ELx, SPSR_ELx, and LR, and increments the current Guarded control stack pointer register by the size of a Guarded control stack exception return record.

Configuration

This instruction is present only when FEAT_GCS is implemented. Otherwise, direct accesses to GCSPOPCX are undefined.

Attributes

GCSPOPCX 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 GCSPOPCX

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:

GCSP0PCX

op0	op1	CRn	CRm	op2
0b01	0b000	0b0111	0b0111	0b101

```
if PSTATE.EL == EL0 then
    UNDEFINED;
elsif PSTATE.EL == EL1 then
    if IsFeatureImplemented(FEAT_GCS) &&
    GetCurrentEXLOCKEN() && !Halted() && PSTATE.EXLOCK
    == '1' then
        EXLOCKException();
    elsif EL2Enabled() &&
    IsFeatureImplemented(FEAT_FGT) && (!HaveEL(EL3) ||
    SCR_EL3.FGTEn == '1') && HFGITR_EL2.nGCSEPP == '0'
    then
        AArch64.SystemAccessTrap(EL2, 0x18);
    else
        GCSP0PCX();
elsif PSTATE.EL == EL2 then
    if IsFeatureImplemented(FEAT_GCS) &&
    GetCurrentEXLOCKEN() && !Halted() && PSTATE.EXLOCK
    == '1' then
        EXLOCKException();
    else
        GCSP0PCX();
elsif PSTATE.EL == EL3 then
    if IsFeatureImplemented(FEAT_GCS) &&
    GetCurrentEXLOCKEN() && !Halted() && PSTATE.EXLOCK
    == '1' then
        EXLOCKException();
    else
        GCSP0PCX();
```

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