

GCSPR_EL3, Guarded Control Stack Pointer (EL3)

The GCSPR_EL3 characteristics are:

Purpose

Contains the Guarded control stack pointer at EL3.

Configuration

This register is present only when FEAT_GCS is implemented. Otherwise, direct accesses to GCSPR_EL3 are undefined.

Attributes

GCSPR_EL3 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
PTR[63:3]																															
PTR[63:3]																															RES0
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

PTR[63:3], bits [63:3]

EL3 Guarded control stack pointer bits [63:3].

The reset behavior of this field is:

- On a Warm reset, this field resets to an architecturally unknown value.

Bits [2:0]

Reserved, res0.

Accessing GCSPR_EL3

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

MRS <Xt>, GCSPR_EL3

op0	op1	CRn	CRm	op2
0b11	0b110	0b0010	0b0101	0b001

```
if PSTATE.EL == EL0 then
    UNDEFINED;
elsif PSTATE.EL == EL1 then
    UNDEFINED;
elsif PSTATE.EL == EL2 then
    UNDEFINED;
elsif PSTATE.EL == EL3 then
    X[t, 64] = GCSPR_EL3;
```

MSR GCSPR_EL3, <Xt>

op0	op1	CRn	CRm	op2
0b11	0b110	0b0010	0b0101	0b001

```
if PSTATE.EL == EL0 then
    UNDEFINED;
elsif PSTATE.EL == EL1 then
    UNDEFINED;
elsif PSTATE.EL == EL2 then
    UNDEFINED;
elsif PSTATE.EL == EL3 then
    GCSPR_EL3 = X[t, 64];
```

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