AMCFGR, Activity Monitors Configuration Register

The AMCFGR characteristics are:

Purpose

Global configuration register for the activity monitors.

Provides information on supported features, the number of counter groups implemented, the total number of activity monitor event counters implemented, and the size of the counters. AMCFGR is applicable to both the architected and the auxiliary counter groups.

Configuration

External register AMCFGR bits [31:0] are architecturally mapped to AArch64 System register AMCFGR_EL0[31:0].

External register AMCFGR bits [31:0] are architecturally mapped to AArch32 System register AMCFGR[31:0].

It is implementation defined whether AMCFGR is implemented in the Core power domain or in the Debug power domain.

This register is present only when FEAT_AMUv1 is implemented. Otherwise, direct accesses to AMCFGR are res0.

Attributes

AMCFGR is a 32-bit register.

Field descriptions

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
NCG	RES0	HDBG	RAZ	SIZE	N

NCG, bits [31:28]

Defines the number of counter groups.

The number of implemented counter groups is [AMCFGR.NCG + 1].

If the number of implemented auxiliary activity monitor event counters is zero, this field has a value of 0b0000. Otherwise, this field has a value of 0b0001.

This field has an implementation defined value.

Access to this field is **RO**.

Bits [27:25]

Reserved, res0.

HDBG, bit [24]

Halt-on-debug supported.

This feature must be supported, and so this bit is `0b1`.

HDBG	Meaning
0b0	[AMCR](#).HDBG is res0.
0b1	[AMCR](#).HDBG is read/write.

This field has an implementation defined value.

Access to this field is **RO**.

Bits [23:14]

Reserved, RAZ.

SIZE, bits [13:8]

Defines the size of activity monitor event counters.

The size of the activity monitor event counters implemented by the Activity Monitors Extension is [AMCFGR.SIZE + 1].

The counters are 64-bit.

Note

Software also uses this field to determine the spacing of counters in the memory-map. The counters are at doubleword-aligned addresses.

Reads as `0b111111`.

Access to this field is **RO**.

N, bits [7:0]

Defines the number of activity monitor event counters.

The total number of counters implemented in all groups by the Activity Monitors Extension is [AMCFGR.N + 1].

This field has an implementation defined value.

Access to this field is **RO**.

Accessing AMCFGR

AMCFGR can be accessed through the memory-mapped interfaces:

Component	Offset	Instance
AMU	`0xE00`	AMCFGR

Accesses on this interface are **RO**.

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