CNTVCT, Counter-timer Virtual Count

The CNTVCT characteristics are:

Purpose

Holds the 64-bit virtual count value.

Configuration

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

For more information, see 'Power and reset domains for the system level implementation of the Generic Timer'.

Attributes

CNTVCT 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

| Virtual count value |
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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

Bits [63:0]

Virtual count value.

The reset behavior of this field is:

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

Accessing CNTVCT

CNTVCT can be implemented in any implemented CNTBaseN frame, and in the corresponding CNTEL0BaseN frame, as a RO register.

'CNTCTLBase status and control fields for the CNTBaseN and CNTEL0BaseN frames' describes the status fields that identify whether a CNTBaseN frame is implemented, and for an implemented frame:

- Whether the CNTBaseN frame has virtual timer capability.
- Whether the corresponding CNTEL0BaseN frame is implemented.

- For an implementation that recognizes two Security states, whether the CNTBaseN frame, and any corresponding CNTEL0BaseN frame, is accessible by Non-secure accesses.

For an implemented CNTBaseN frame:

- CNTVCT is accessible in that frame, as a RO register, if the value of CNTACR<n>.RVCT is 1.
- Otherwise, the CNTVCT address in that frame is RAZ/WI.

For an implemented CNTEL0BaseN frame:

- CNTVCT is accessible in that frame if both:
  - CNTVCT is accessible in the corresponding CNTBaseN frame.
  - The value of CNTEL0ACR.EL0VCTEN is 1.
- Otherwise, the CNTVCT address in that frame is RAZ/WI.

If the implementation supports 64-bit atomic accesses, then the CNTVCT register must be accessible as an atomic 64-bit value.

CNTVCT can be accessed through the memory-mapped interfaces:

Component	Frame	Offset	Instance	Range
Timer	CNTBaseN	0x008	CNTVCT	31:0

Accesses on this interface are **RO**.

Component	Frame	Offset	Instance	Range
Timer	CNTBaseN	0x00C	CNTVCT	63:32

Accesses on this interface are **RO**.

Component	Frame	Offset	Instance	Range
Timer	CNTEL0BaseN	0x008	CNTVCT	31:0

Accesses on this interface are **RO**.

Component	Frame	Offset	Instance	Range
Timer	CNTEL0BaseN	0x00C	CNTVCT	63:32

Accesses on this interface are **RO**.

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