TRCVMIDCCTLR0, Virtual Context Identifier Comparator Control Register 0

The TRCVMIDCCTLR0 characteristics are:

Purpose

Virtual Context Identifier Comparator mask values for the TRCVMIDCVR<n> registers, where n=0-3.

Configuration

External register TRCVMIDCCTLR0 bits [31:0] are architecturally mapped to AArch64 System register TRCVMIDCCTLR0[31:0].

This register is present only when FEAT_ETE is implemented, FEAT_TRC_EXT is implemented, UInt(TRCIDR4.NUMVMIDC) > 0x0 and UInt(TRCIDR2.VMIDSIZE) > 0. Otherwise, direct accesses to TRCVMIDCCTLR0 are res0.

Attributes

TRCVMIDCCTLR0 is a 32-bit register.

Field descriptions

31	30	29	28	27	26	25	24	23	22
COMP3[7]	COMP3[6]	COMP3[5]	COMP3[4]	COMP3[3]	COMP3[2]	COMP3[1]	COMP3[0]	COMP2[7]	COMP2[6

COMP3[<m>], bit [m+24], for m = 7 to 0
When UInt(TRCIDR4.NUMVMIDC) > 3:

TRCVMIDCVR3 mask control. Specifies the mask value that the trace unit applies to TRCVMIDCVR3. Each bit in this field corresponds to a byte in TRCVMIDCVR3.

COMP3[<m>]	Meaning
0b0	The trace unit includes TRCVMIDCVR3[(mÃ—8+7):(mÃ—8)] when it performs the Virtual context identifier comparison.

0b1	The trace unit ignores TRCVMIDCVR3[(mÃ—8+7):(mÃ—8)] when it performs the Virtual context identifier comparison.

This bit is res0 if m >= TRCIDR2.VMIDSIZE.

The reset behavior of this field is:

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

Otherwise:

Reserved, res0.

COMP2[<m>], bit [m+16], for m = 7 to 0
When UInt(TRCIDR4.NUMVMIDC) > 2:

TRCVMIDCVR2 mask control. Specifies the mask value that the trace unit applies to TRCVMIDCVR2. Each bit in this field corresponds to a byte in TRCVMIDCVR2.

COMP2[<m>]	Meaning
0b0	The trace unit includes TRCVMIDCVR2[(mÃ—8+7):(mÃ—8)] when it performs the Virtual context identifier comparison.
0b1	The trace unit ignores TRCVMIDCVR2[(mÃ—8+7):(mÃ—8)] when it performs the Virtual context identifier comparison.

This bit is res0 if m >= TRCIDR2.VMIDSIZE.

The reset behavior of this field is:

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

Otherwise:

Reserved, res0.

COMP1[<m>], bit [m+8], for m = 7 to 0
When UInt(TRCIDR4.NUMVMIDC) > 1:

TRCVMIDCVR1 mask control. Specifies the mask value that the trace unit applies to TRCVMIDCVR1. Each bit in this field corresponds to a byte in TRCVMIDCVR1.

COMP1[<m>]	Meaning
0b0	The trace unit includes TRCVMIDCVR1[(mÃ—8+7):(mÃ—8)] when it performs the Virtual context identifier comparison.
0b1	The trace unit ignores TRCVMIDCVR1[(mÃ—8+7):(mÃ—8)] when it performs the Virtual context identifier comparison.

This bit is res0 if m >= TRCIDR2.VMIDSIZE.

The reset behavior of this field is:

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

Otherwise:

Reserved, res0.

COMP0[<m>], bit [m], for m = 7 to 0
When UInt(TRCIDR4.NUMVMIDC) > 0:

TRCVMIDCVR0 mask control. Specifies the mask value that the trace unit applies to TRCVMIDCVR0. Each bit in this field corresponds to a byte in TRCVMIDCVR0.

COMP0[<m>]	Meaning
0b0	The trace unit includes TRCVMIDCVR0[(mÃ—8+7):(mÃ—8)] when it performs the Virtual context identifier comparison.

0b1	The trace unit ignores TRCVMIDCVR0[(mÃ—8+7):(mÃ—8)] when it performs the Virtual context identifier comparison.

This bit is res0 if m >= TRCIDR2.VMIDSIZE.

The reset behavior of this field is:

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

Otherwise:

Reserved, res0.

Accessing TRCVMIDCCTLR0

If software uses the TRCVMIDCVR<n> registers, where n=0-3, then it must program this register.

If software sets a mask bit to 1 then it must program the relevant byte in TRCVMIDCVR<n> to `0x00`.

If any bit is 1 and the relevant byte in TRCVMIDCVR<n> is not `0x00`, the behavior of the Virtual Context Identifier Comparator is constrained unpredictable. In this scenario the comparator might match unexpectedly or might not match.

Writes are constrained unpredictable if the trace unit is not in the Idle state.

TRCVMIDCCTLR0 can be accessed through the external debug interface:

Component	Offset	Instance
ETE	`0x688`	TRCVMIDCCTLR0

This interface is accessible as follows:

- When OSLockStatus(), or !AllowExternalTraceAccess() or ! IsTraceCorePowered(), accesses to this register generate an error response.
- Otherwise, accesses to this register are **RW**.

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