

Update of MCDS Control

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In preparation for trace support for the AURIX TC4x, Lauterbach has redesigned the commands for MCDS control. The goal was intuitive operation despite increasingly complex MCDS resources. While the previous operating concept allowed a direct setting of the MCDS resources by TRACE32 commands, the new operating concept focuses on the requirements of the trace user and relieves him from implementation details.

The following applies to the AURIX[™] TriCore[™] TC3x and in the future to the TC4x.

1 Trace control in TRACE32 instance/GUI

The new MCDS commands in a TRACE32 instance/GUI always control the trace recording for the cores that are debugged via this instance.

🖧 B::CORE.List - - sel core stop state pc symbol P:70100000 \\tc39x_sieve_intmem\Global_STAR < B::MCDS - - mcds ProgramTrace DataTrace Mode Mode OFF FlowTrace ~ ReadWrite ON Agent Agent Core0 Core0 RESet CLEAR ⊗ Init INFO Register TraceBuffer commands TimeStamp CLOCK OFF ≫ advanced () BMC OON Trace

Example 1: TRACE32 instance is setup to debug a single core.



🖧 B::CORE.List - • • sel core 0 stop state symbol pc P:7010045C ymbot /tc39x_sieve_intmem\taskc\func8 /tc39x_sieve_intmem\taskc\sieve /tc39x_sieve_intmem\taskc\func20 /tc39x_sieve_intmem\taskc\func2a 123 * * * P:70100BD8 P:701002E8 P:70100334 > < ℰ B∷MCDS mcds ProgramTrace DataTrace Mode Mode FlowTrace ~ ReadWrite \sim ON Agent Agent Core0 Core0 RESet Core1 Core1 CLEAR Core2 Core2 ⊗ Init Core3 Core3 INFO 🛷 Register TraceBuffer TimeStamp commands 🕀 CLOCK OFF ≫ advanced 🛞 BMC OON Trace

Example 2: TRACE32 instance is setup to debug 4 cores.

The mapping of the settings of the individual instances to the MCDS resources is done by TRACE32. If the MCDS resources are exhausted, an error message is displayed when the next command is entered.



2 Example for new syntax

In accordance with the TRACE32 user philosophy, GUI controls in TRACE32 windows are labeled in such a way that the command syntax can be derived directly from them. To get familiar with the new commands just open the MCDS.state window. Here is a little example:

B::MCDS		B::MCDS		×
mcds Prog ○ OFF Mo ● ON Flo ■ CLEAR □ C ○ Init □ C ☞ Register □ C TraceBuffer □ C ◎ ON □ C ○ SBMC ○ ON	gramTrace DataTrace Mode Mode ReadWrite Ventrace Agent Core0 Core1 Core2 Core3 Core4 Core5 PFF N Mode ReadWrite Ventrace N	mcds O OFF O ON RESet CLEAR O Init Register TraceBuffer CLOCK BMC Trace	ProgramTrace DataTrace Mode Mode Mode Virite V Agent Agent Core0 Core1 Core2 Core3 Core3 Core5 Core5	
MCDS.Program	Trace.Agent Core0 Trace.Mode FlowTra	Corel ace		

MCDS.DataTrace.Agent Core1 MCDS.DataTrace.Mode Write

MCDS.TimeStamp ON

Since the new syntax abstracts the MCDS control from the resources and takes a more user-oriented view, a 1:1 conversion of the old syntax, which was strongly oriented towards the MCDS resources, is not possible.



3 Comparisons to the previous MCDS settings

If you use the new control syntax you can use the MCDS.SOURCE.state command to see how the MCDS state window would have looked like in the past.

OFF	Mode	Mode	B::MCDS.SOURC	B::MCDS.SOURCE.state				
● ON	FlowTrace V	Write ~ Agent	SOURCE.Set	CpuMux1	CpuMux2	SPB	SRI	
RESet	Core0	Core0	Program	Program	Program	ReadAddr	-1	2
CLEAR	Core1	Core1	ReadAddr	ReadAddr	ReadAddr	ReadData	ReadAddr	ReadAddr
Ø Init	Core2	Core2	ReadData	ReadData	ReadData	WriteAddr	ReadData	ReadData
INFO	Core3	Core3	WriteAddr	WriteAddr	WriteAddr	WriteData	WriteAddr	WriteAdd
Register	Core4	Core4	WriteData	✓ WriteData	WriteData		WriteData	WriteData
TraceBuffer	Core5	Core5	- PTMode	- PTMode	- PTMode		- SLAVE	SLAVE
			FlowTrace 🗸	FlowTrace 💛	FlowTrace 🗸		NONE 🗠	NONE
ommands	- TimeStamp		- Core	Core	Core			
CLOCK	OOFF	>> advanced	TriCore0 🗸	TriCore1 💚	NONE 🗸			
S BMC	ON							
Trace			L					

4 Backward compatibility

Scripts that TRACE32 users have created for the AURIX TC3x can continue to be used in the long term. For the AURIX TC4x, the new commands will have to be used in the future.

Please be aware that the deprecated MCDS control commands have no effect on the MCDS.state window, because the deprecated commands cannot be mapped 1:1 to the new ones. However, you can use MCDS.SOURCE.state to check the MCDS setup.

5 Full documentation of updated MCDS control

More documentation for the updated MCDS control is planned for the TRACE32 Release 09/2022.