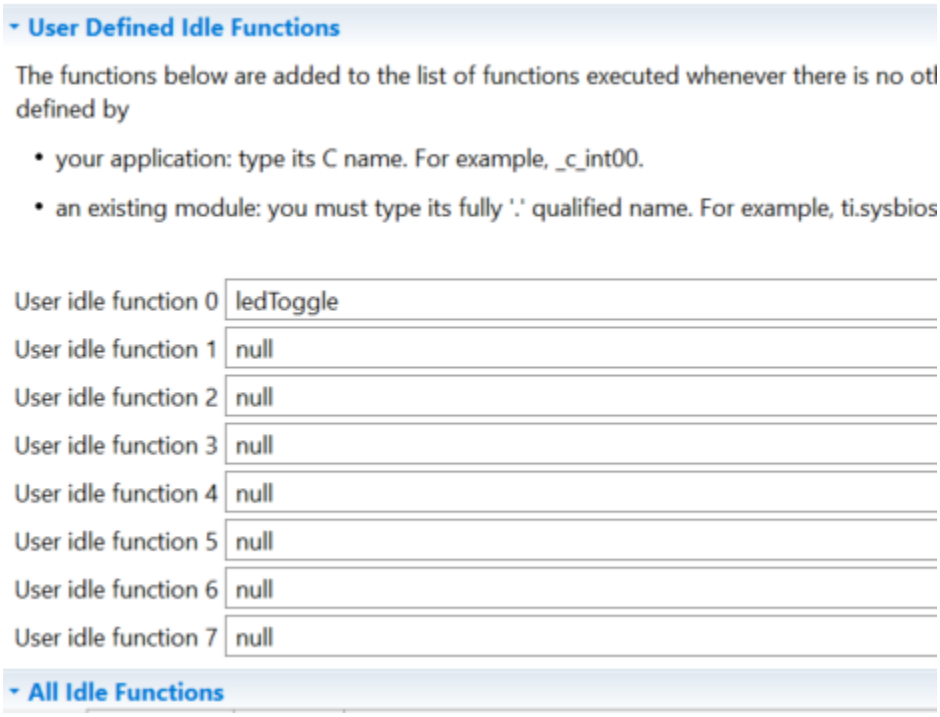
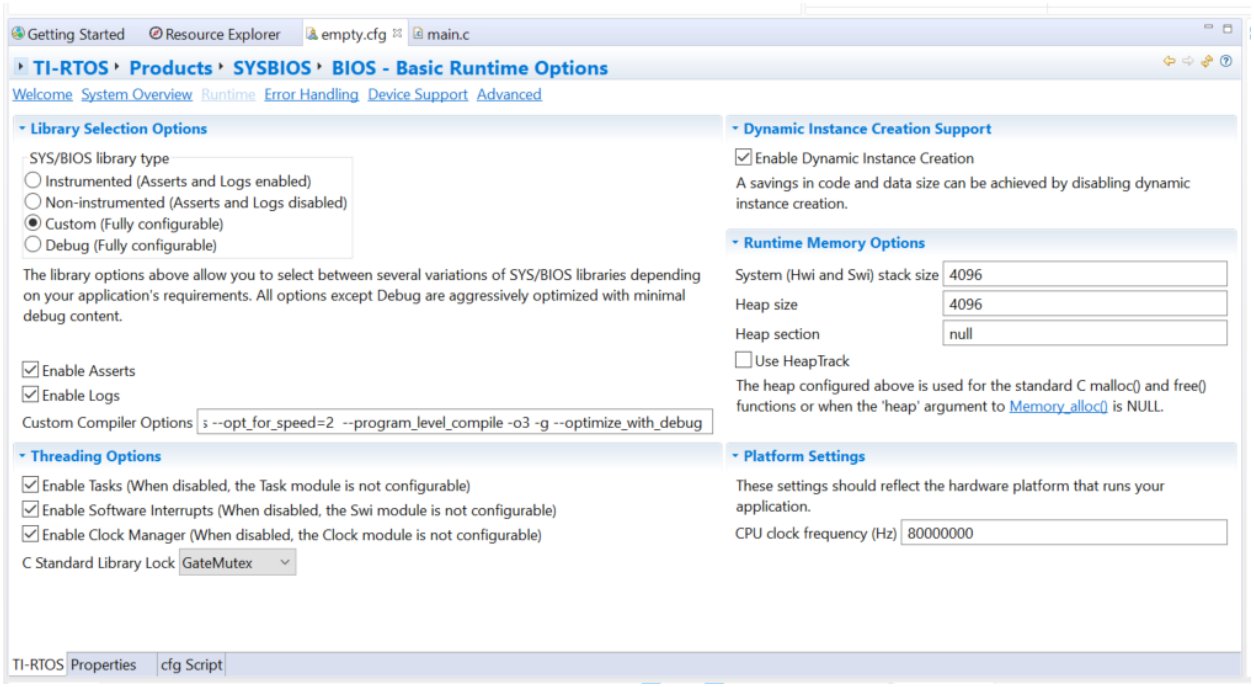
Lab 4

Getting rid of task

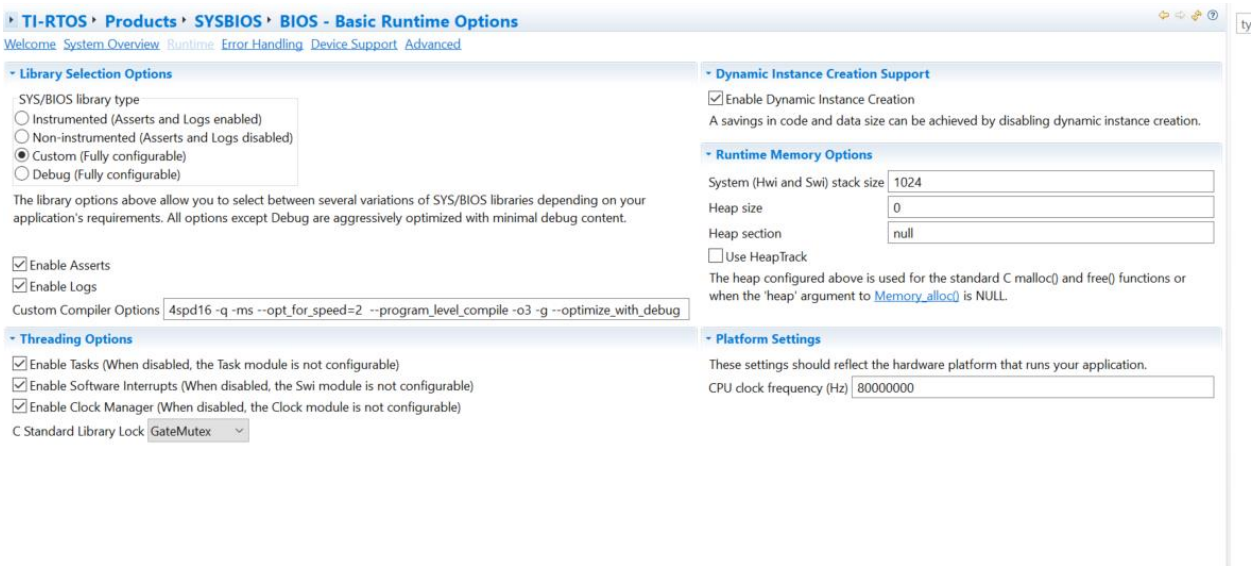
Idle function



Config

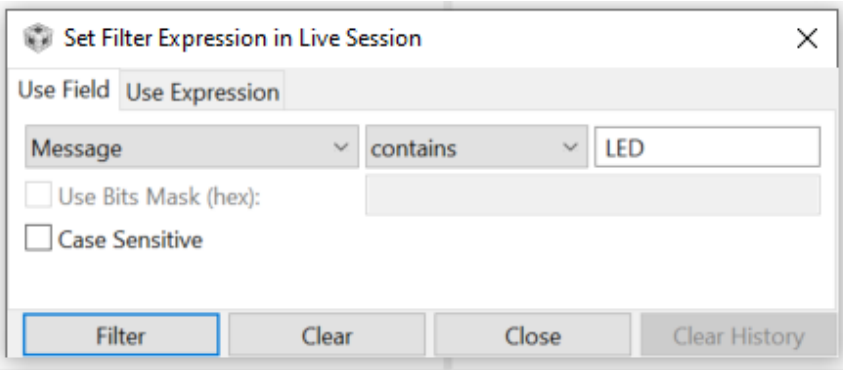


UIA Config


TI-RTOS Products SYSBIOS BIOS - Basic Runtime Options
Welcome System Overview Runtime Error Handling Device Support Advanced
Library Selection Options
SYS/BIOS library type
Instrumented (Asserts and Logs enabled)
Non-instrumented (Asserts and Logs disabled)
Custom (Fully configurable)
Debug (Fully configurable)
The library options above allow you to select between several variations of SYS/BIOS libraries depending on your application's requirements. All options except Debug are aggressively optimized with minimal debug content.
Enable Asserts
Enable Logs
Custom Compiler Options 4spd16 -q -ms --opt_for_speed=2 --program_level_compile -o3 -g --optimize_with_debug
Threading Options
Enable Tasks (When disabled, the Task module is not configurable)
Enable Software Interrupts (When disabled, the Swi module is not configurable)
Enable Clock Manager (When disabled, the Clock module is not configurable)
C Standard Library Lock GateMutex
Dynamic Instance Creation Support
Enable Dynamic Instance Creation
A savings in code and data size can be achieved by disabling dynamic instance creation.
Runtime Memory Options
System (Hwi and Swi) stack size 1024
Heap size 0
Heap section null
Use HeapTrack
The heap configured above is used for the standard C malloc() and free() functions or when the 'heap' argument to Memory_alloc() is NULL.
Platform Settings
These settings should reflect the hardware platform that runs your application.
CPU clock frequency (Hz) 80000000

RTOSAnalyzer

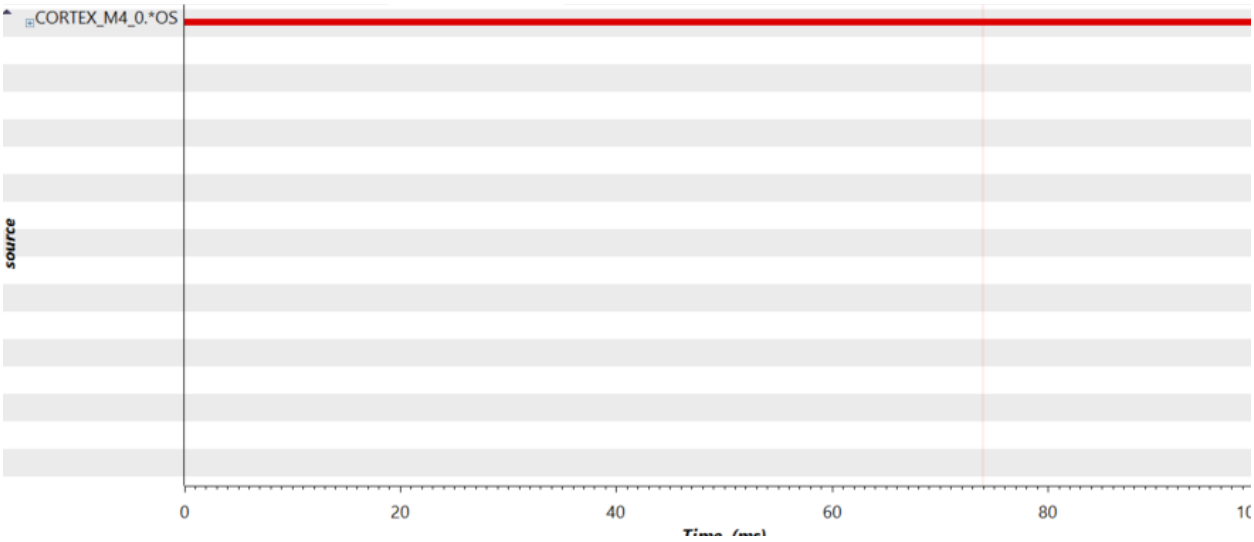
Live



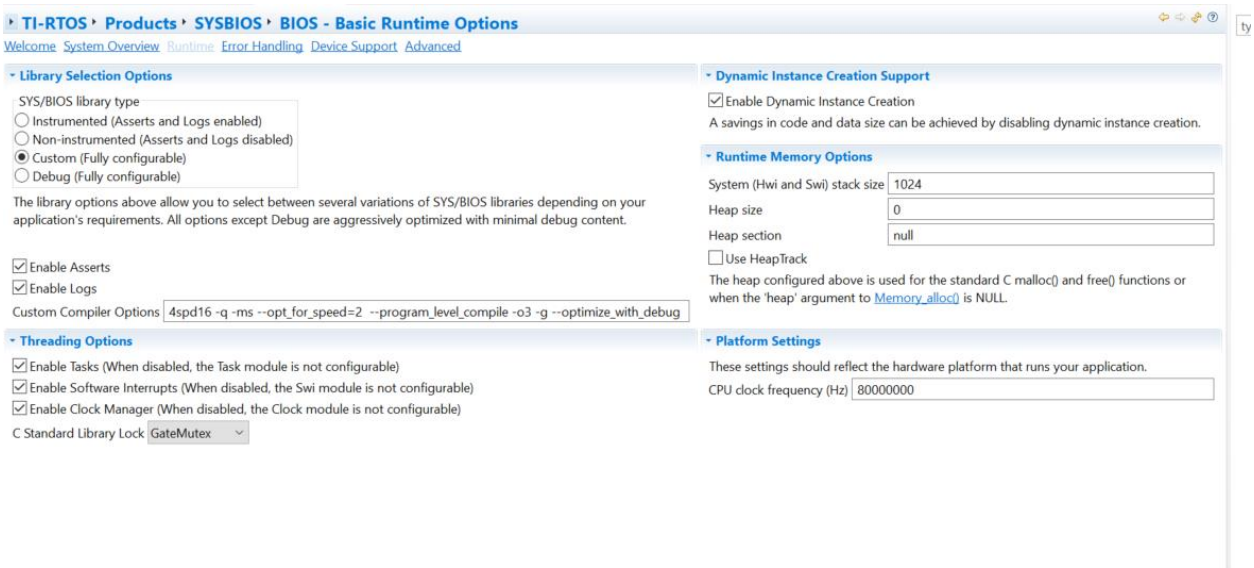
Problems | Available Products | *Live Session | *Execution Graph | *CPU Load: Graph

	Type	Time	Error	Master	Message	Event	EventClass	Data
13	i	3789720600		CORTEX_M4_0	[../main.c:121] TOGGLED LED [15] times	Log_L_info	Info	
14	i	4042367425		CORTEX_M4_0	[../main.c:121] TOGGLED LED [16] times	Log_L_info	Info	
15	i	4295013925		CORTEX_M4_0	[../main.c:121] TOGGLED LED [17] times	Log_L_info	Info	
16	i	4547660737		CORTEX_M4_0	[../main.c:121] TOGGLED LED [18] times	Log_L_info	Info	
17	i	4800312750		CORTEX_M4_0	[../main.c:121] TOGGLED LED [19] times	Log_L_info	Info	
18	i	5052954075		CORTEX_M4_0	[../main.c:121] TOGGLED LED [20] times	Log_L_info	Info	
19	i	5305606075		CORTEX_M4_0	[../main.c:121] TOGGLED LED [21] times	Log_L_info	Info	
20	i	5558252887		CORTEX_M4_0	[../main.c:121] TOGGLED LED [22] times	Log_L_info	Info	
21	i	5810899412		CORTEX_M4_0	[../main.c:121] TOGGLED LED [23] times	Log_L_info	Info	
22	i	6063546225		CORTEX_M4_0	[../main.c:121] TOGGLED LED [24] times	Log_L_info	Info	
23	i	6316198225		CORTEX_M4_0	[../main.c:121] TOGGLED LED [25] times	Log_L_info	Info	
24	i	6568839550		CORTEX_M4_0	[../main.c:121] TOGGLED LED [26] times	Log_L_info	Info	
25	i	6821491562		CORTEX_M4_0	[../main.c:121] TOGGLED LED [27] times	Log_L_info	Info	
26	i	7074138375		CORTEX_M4_0	[../main.c:121] TOGGLED LED [28] times	Log_L_info	Info	
27	i	7326784875		CORTEX_M4_0	[../main.c:121] TOGGLED LED [29] times	Log_L_info	Info	
28	i	7579431700		CORTEX_M4_0	[../main.c:121] TOGGLED LED [30] times	Log_L_info	Info	
29	i	7832078650		CORTEX_M4_0	[../main.c:121] TOGGLED LED [31] times	Log_L_info	Info	

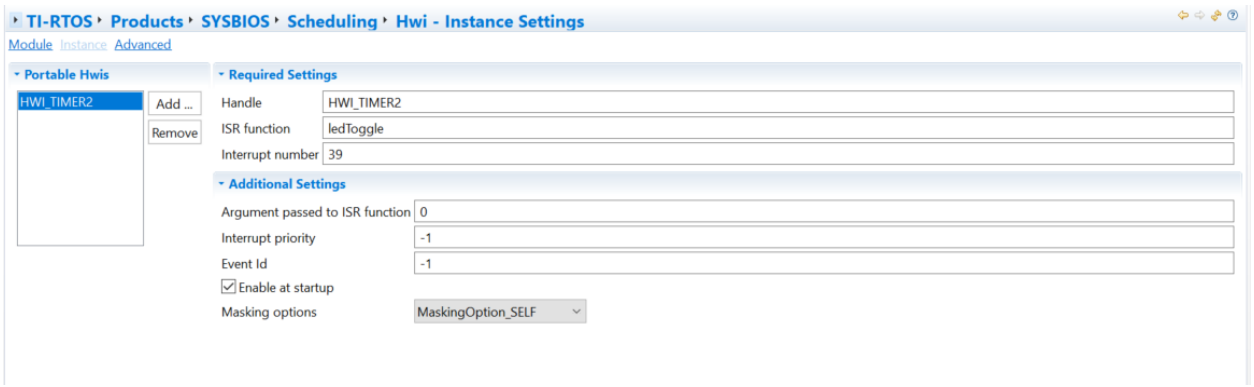
execution graph



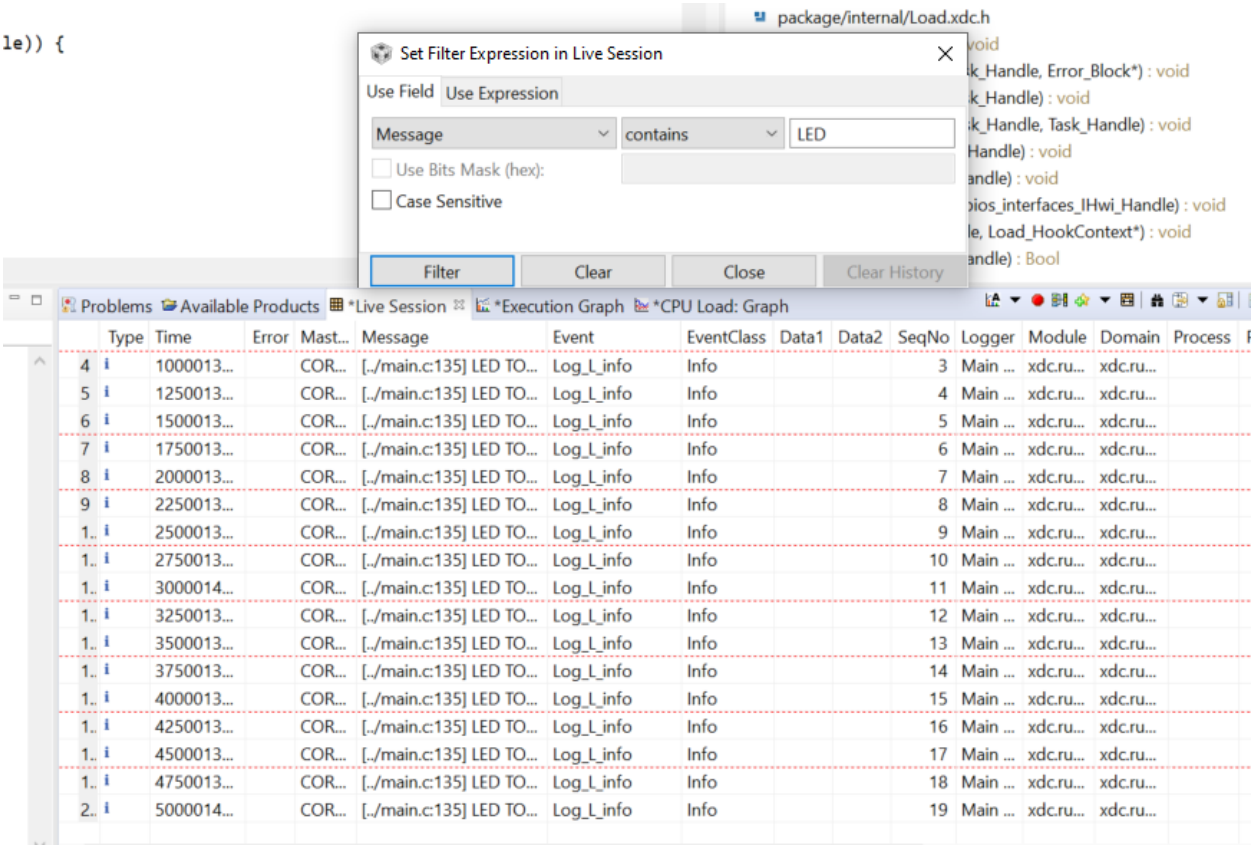
Lab 5



Hwi

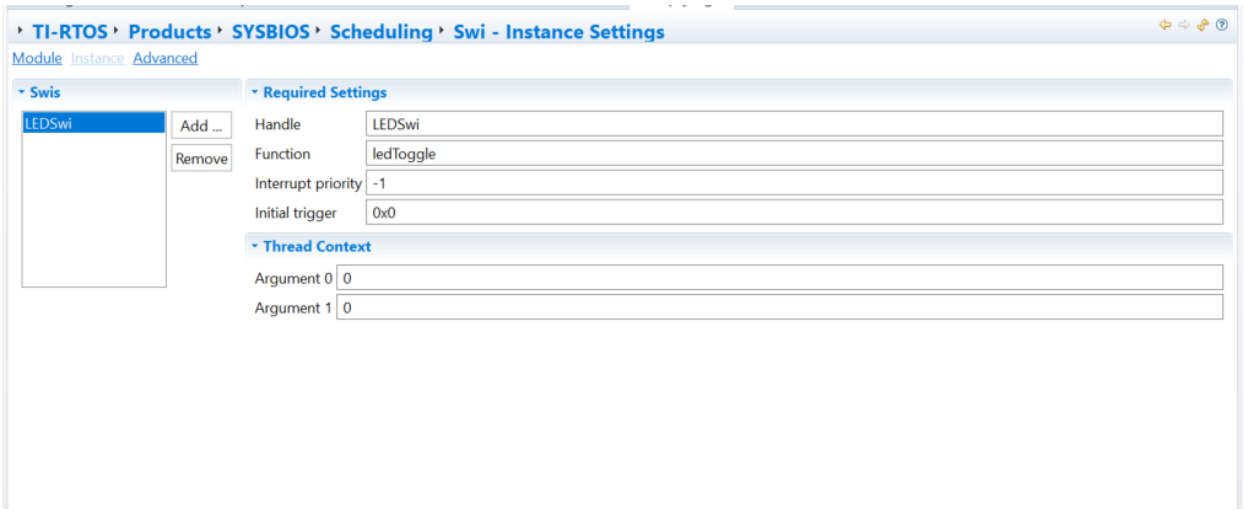


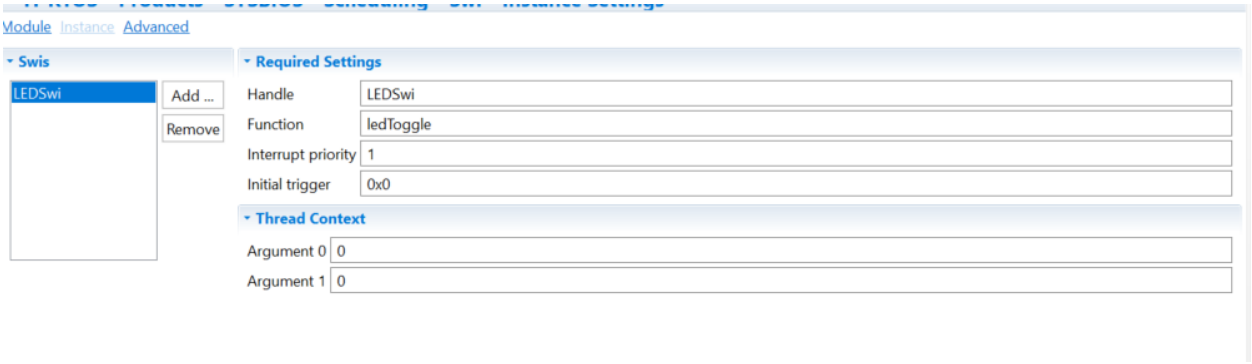
Rtos analyzer



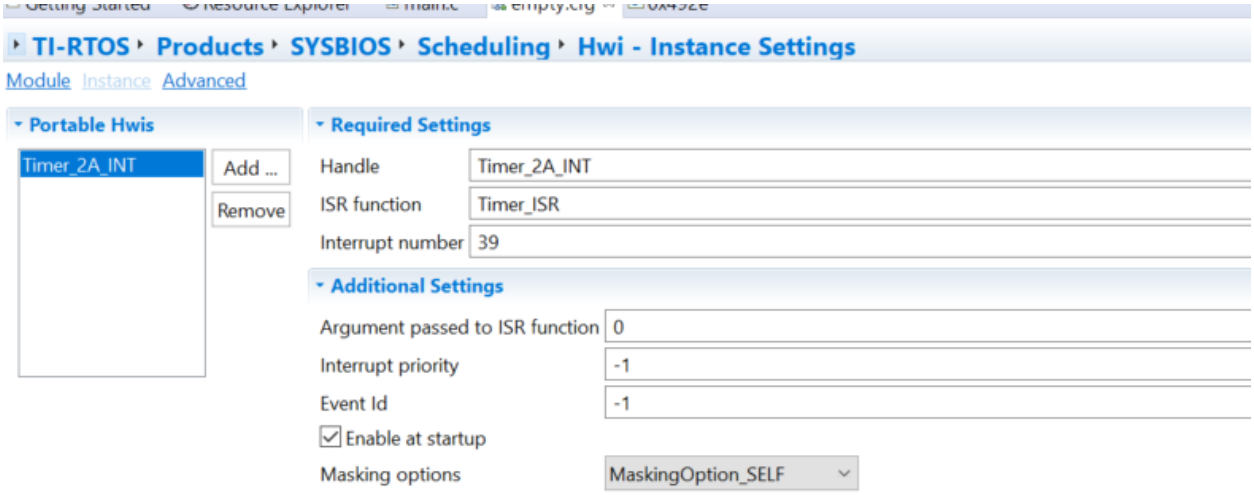
Lab 6

Configuration:

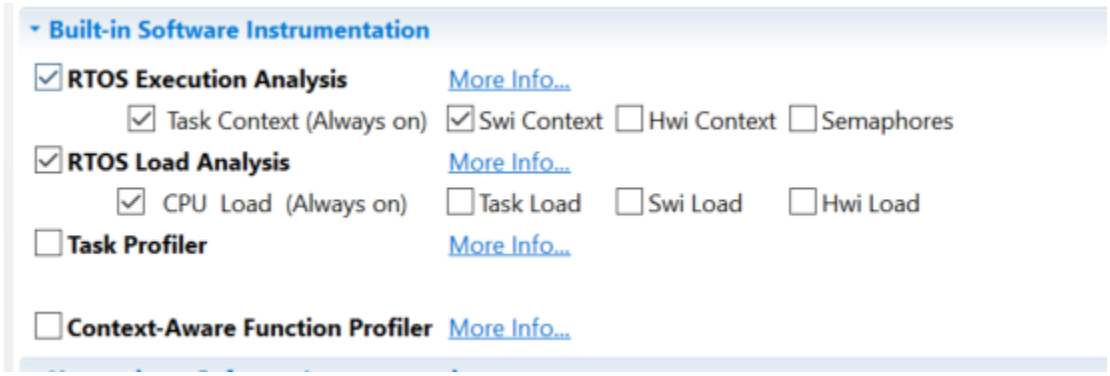



Module Instance Advanced
Swis
LEDSwi
Add ...
Remove
Required Settings
Handle LEDSwi
Function ledToggle
Interrupt priority 1
Initial trigger 0x0
Thread Context
Argument 0 0
Argument 1 0

Hwi


TI-RTOS Products SYSBIOS Scheduling Hwi - Instance Settings
Module Instance Advanced
Portable Hwis
Timer_2A_INT
Add ...
Remove
Required Settings
Handle Timer_2A_INT
ISR function Timer_ISR
Interrupt number 39
Additional Settings
Argument passed to ISR function 0
Interrupt priority -1
Event Id -1
Enable at startup
Masking options MaskingOption_SELF

Logging

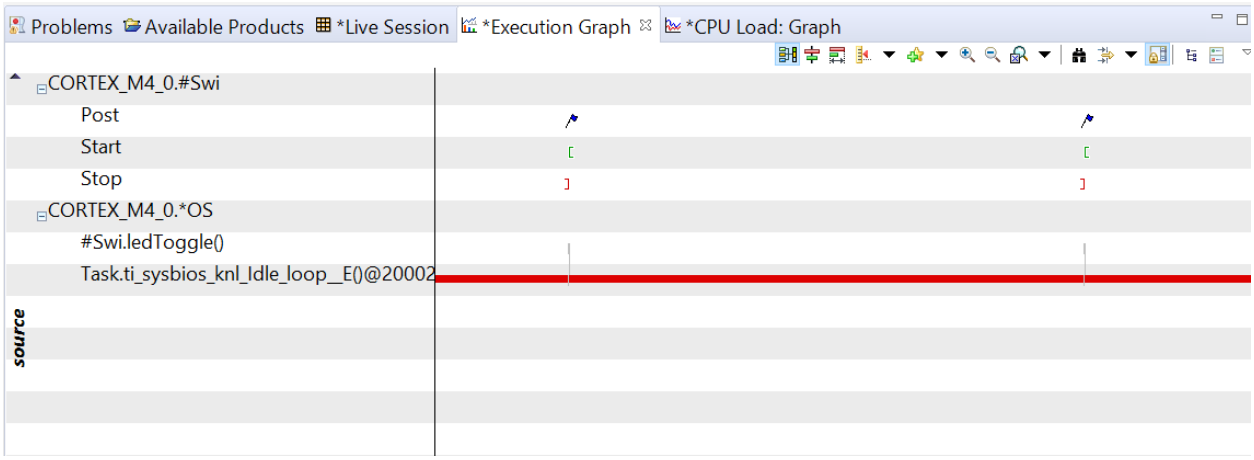

Built-in Software Instrumentation
RTOS Execution Analysis More Info...
Task Context (Always on) Swi Context Hwi Context Semaphores
RTOS Load Analysis More Info...
CPU Load (Always on) Task Load Swi Load Hwi Load
Task Profiler More Info...
Context-Aware Function Profiler More Info...

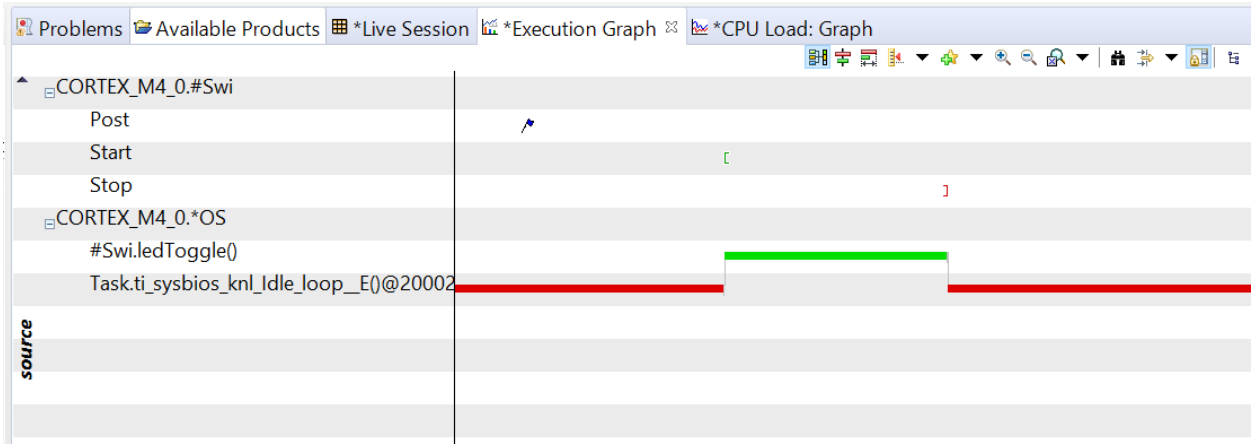
RTOs Analyzer

Problems | Available Products | *Live Session | *Execution Graph | *CPU Load: Graph

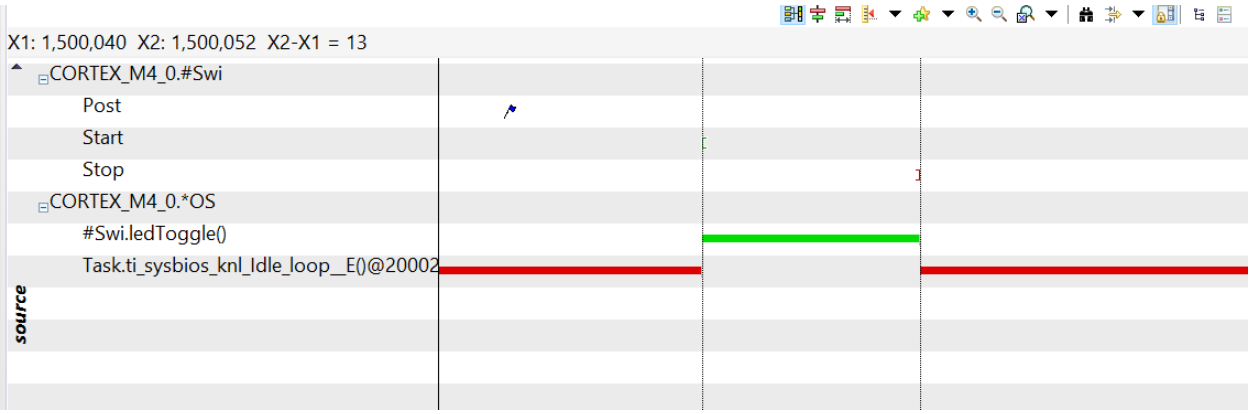
Type	Time	Error	Master	Message	Event	EventClass	Data1	Data2	SeqNo	Logger
	8637006375		CORTEX_M4_0	LM_begin: swi: 0x20002264, func: 0x2a09, preThread: 2	Start	SWI	ledToggle()		57	SYSBIO
	8637013525		CORTEX_M4_0	[../main.c:132] LED TOGGLED [19] TIMES	Log_L_info	Info			18	Main Lo
	8637019175		CORTEX_M4_0	LD_end: swi: 0x20002264	Stop	SWI	ledToggle()		58	SYSBIO
	9000151450		CORTEX_M4_0	LS_cpuLoad: 1%	Load	CPU	CPU	1.00	17	Load Lo
	9136994900		CORTEX_M4_0	LM_post: swi: 0x20002264, func: 0x2a09, pri: 1	Post	SWI	ledToggle()		59	SYSBIO
	9137006400		CORTEX_M4_0	LM_begin: swi: 0x20002264, func: 0x2a09, preThread: 2	Start	SWI	ledToggle()		60	SYSBIO
	9137013550		CORTEX_M4_0	[../main.c:132] LED TOGGLED [20] TIMES	Log_L_info	Info			19	Main Lo
	9137019200		CORTEX_M4_0	LD_end: swi: 0x20002264	Stop	SWI	ledToggle()		61	SYSBIO
	9500158200		CORTEX_M4_0	LS_cpuLoad: 1%	Load	CPU	CPU	1.00	18	Load Lo
	9636994925		CORTEX_M4_0	LM_post: swi: 0x20002264, func: 0x2a09, pri: 1	Post	SWI	ledToggle()		62	SYSBIO
	9637006425		CORTEX_M4_0	LM_begin: swi: 0x20002264, func: 0x2a09, preThread: 2	Start	SWI	ledToggle()		63	SYSBIO
	9637013575		CORTEX_M4_0	[../main.c:132] LED TOGGLED [21] TIMES	Log_L_info	Info			20	Main Lo
	9637019225		CORTEX_M4_0	LD_end: swi: 0x20002264	Stop	SWI	ledToggle()		64	SYSBIO
	10000164925		CORTEX_M4_0	LS_cpuLoad: 1%	Load	CPU	CPU	1.00	19	Load Lo
	10136994950		CORTEX_M4_0	LM_post: swi: 0x20002264, func: 0x2a09, pri: 1	Post	SWI	ledToggle()		65	SYSBIO
	10137006450		CORTEX_M4_0	LM_begin: swi: 0x20002264, func: 0x2a09, preThread: 2	Start	SWI	ledToggle()		66	SYSBIO
	10137013600		CORTEX_M4_0	[../main.c:132] LED TOGGLED [22] TIMES	Log_L_info	Info			21	Main Lo
	10137019250		CORTEX_M4_0	LD_end: swi: 0x20002264	Stop	SWI	ledToggle()		67	SYSBIO

Execution Graph

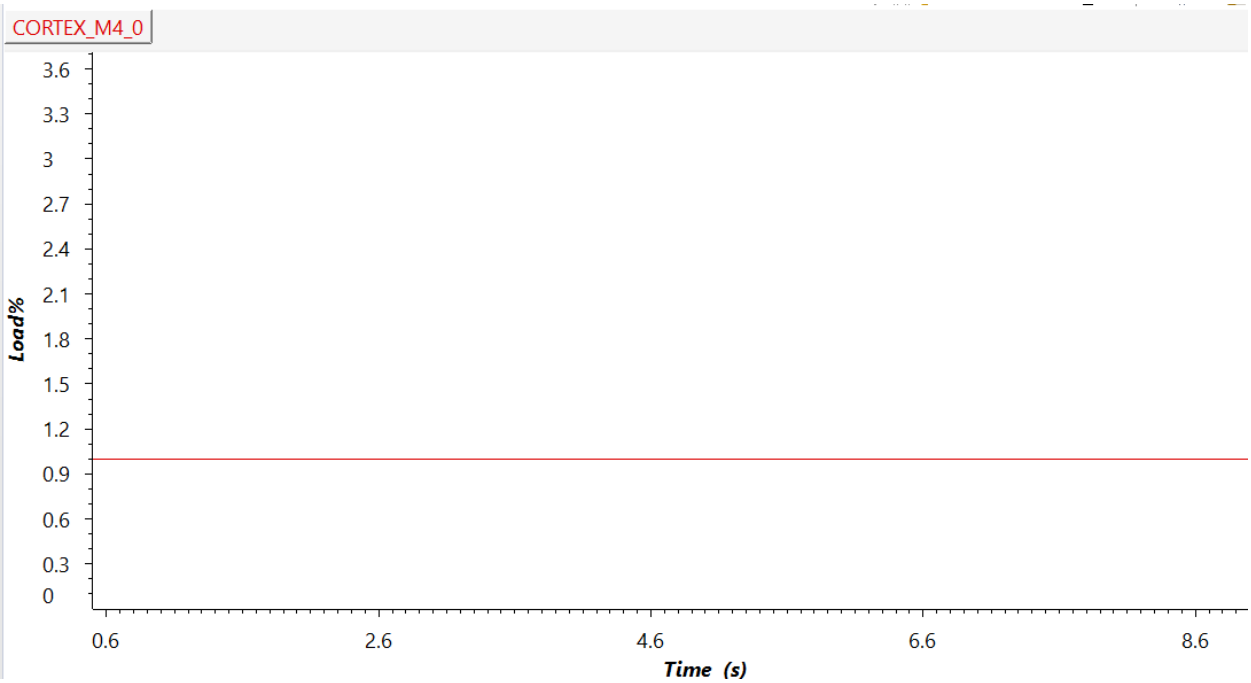




Measurements

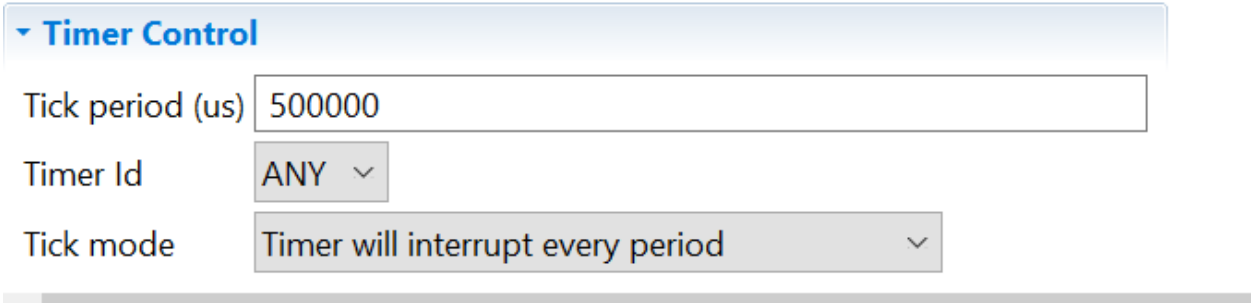


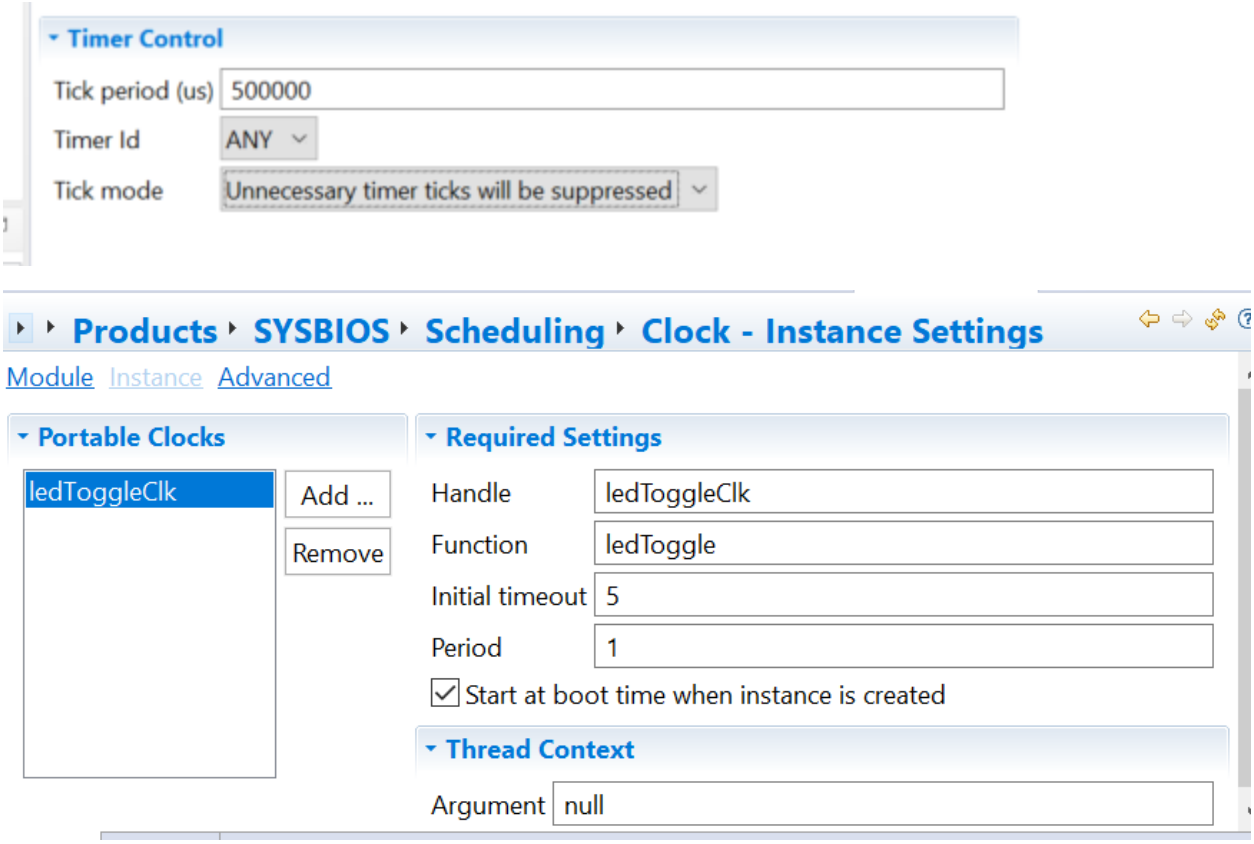
CPU load



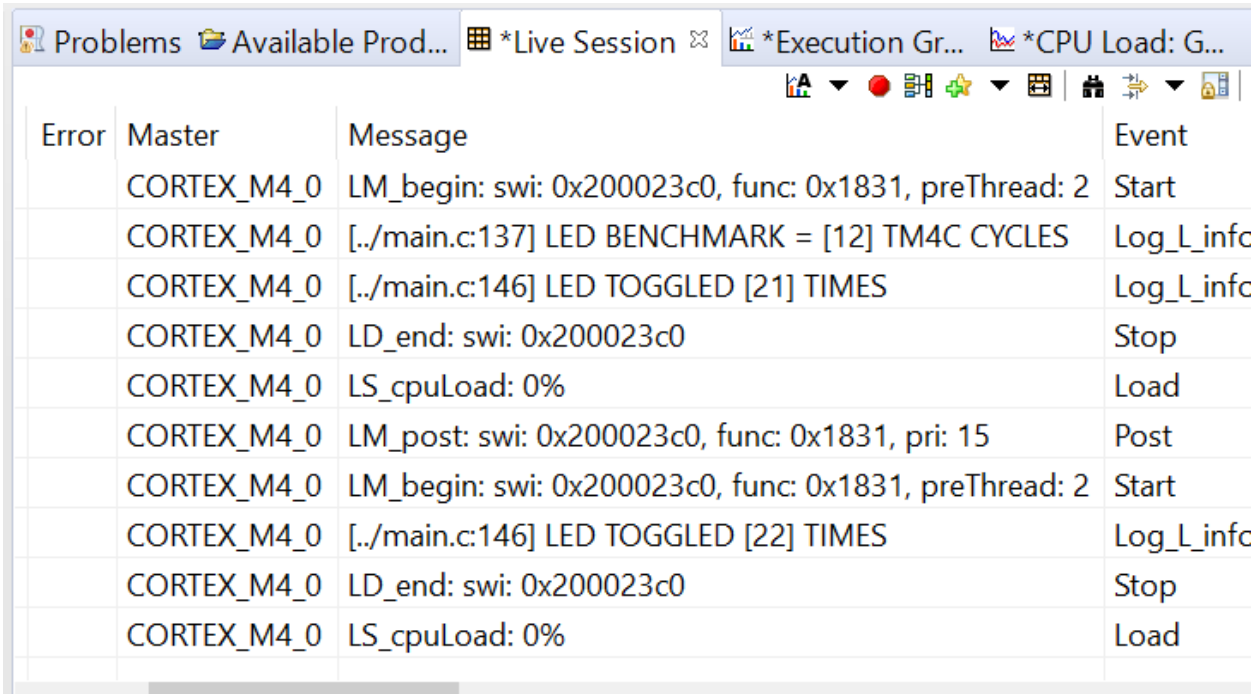
Lab7

Clock

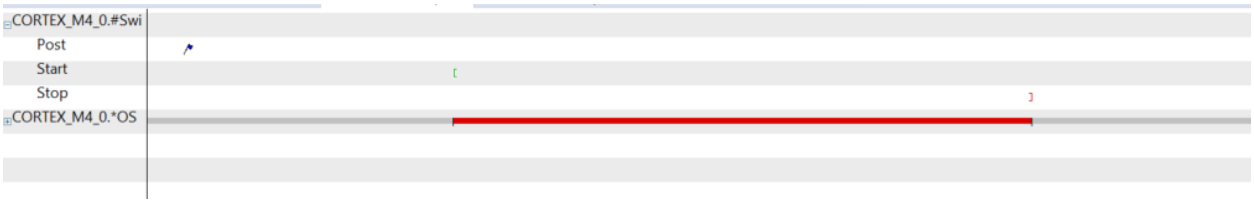




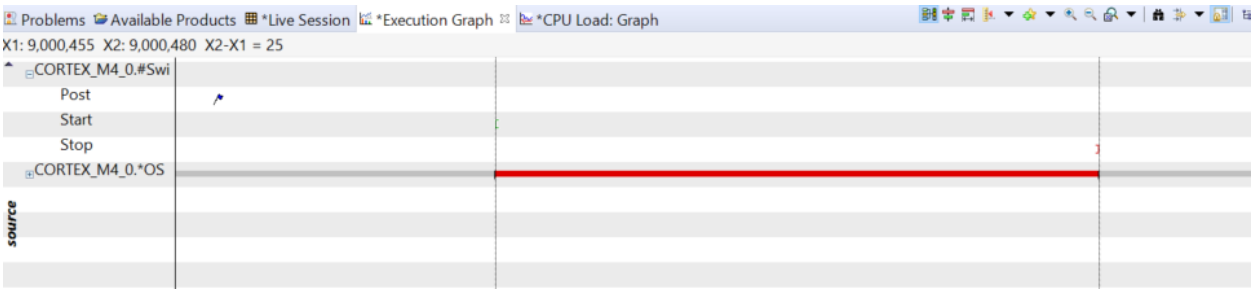
Benchmark and rtos analyzer



Rtos analyzer

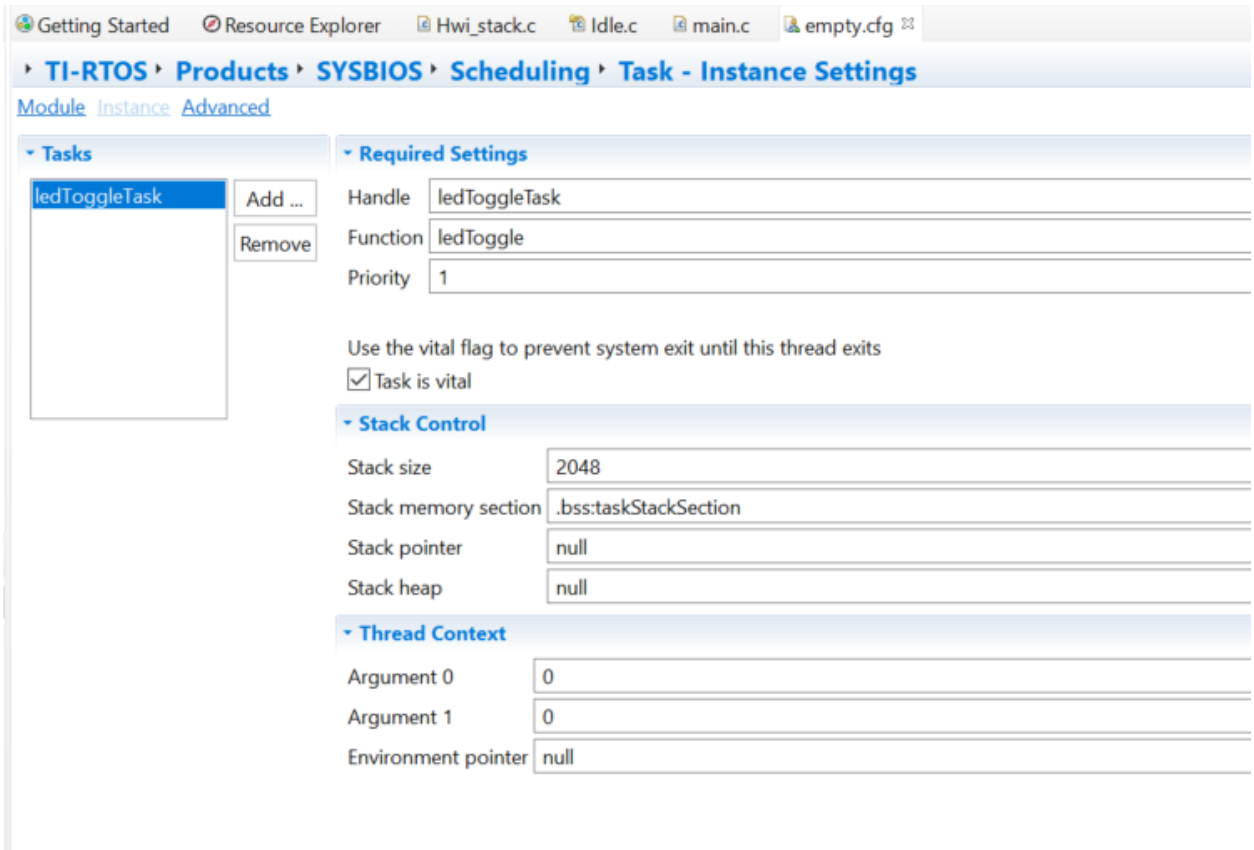


Measurement

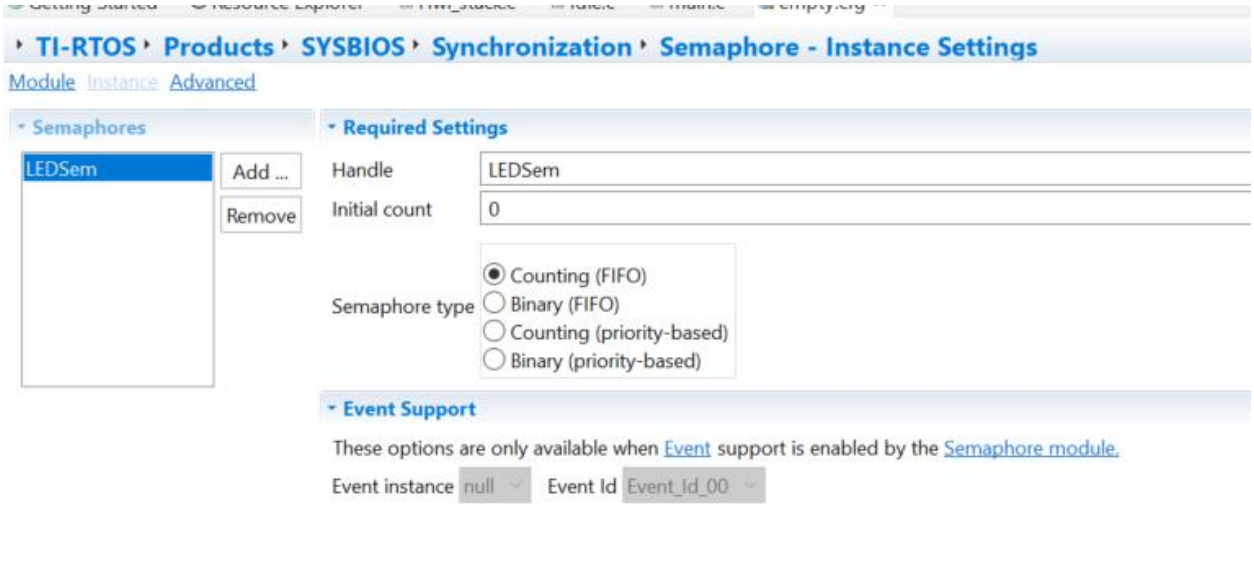


Lab 8

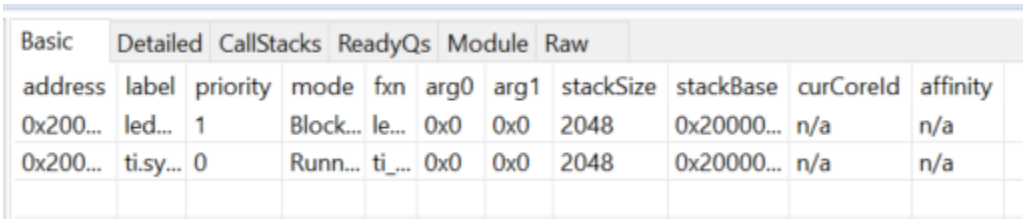
Task config



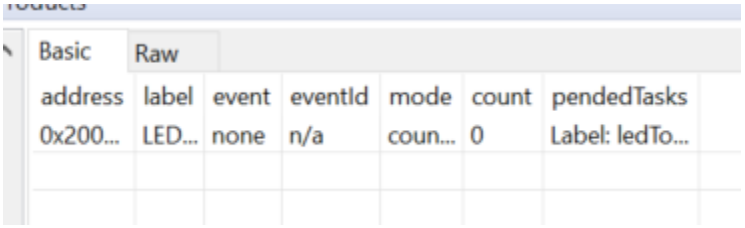
Semaphore config



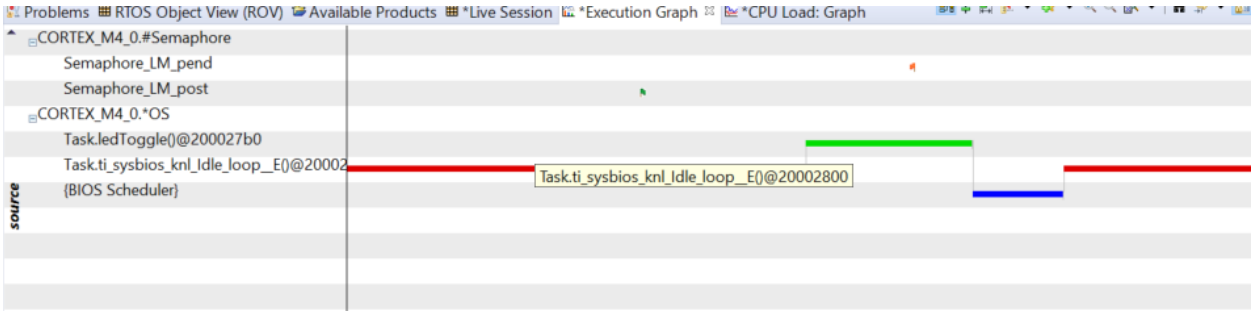
ROV Task



ROV Semaphore



Execution Graph



Task load summary

Problems RTOS Object View (ROV) Available Products

	Source	Co...	Min	Max	Average	Overall
1	CPU	6	0.0	0.0	0.00	0.00
2	TSK:ledTog...	5	0.01	0.01	0.01	0.01
3	TSK:ti_sysbi...	5	99...	99...	99.99	99.99

Lab 9a

mailbox

TI-RTOS › Products › SYSBIOS › Synchronization › Mailbox - Instance Settings

Module Instance Advanced

Mailboxes

LED_Mbx

Add ...

Remove

Required Settings

Handle: LED_Mbx

Size of messages (chars): 4

Max number of messages: 2

Event Synchronization

The events below can be used to synchronize with threads that need to wait for messages to arrive in the mailbox (rea
the mailbox for a new message to be posted (writer event). These options are only available when Event support is en

Reader event: null Event id: Event_Id_00

Writer event: null Event id: Event_Id_00

Message Memory Management

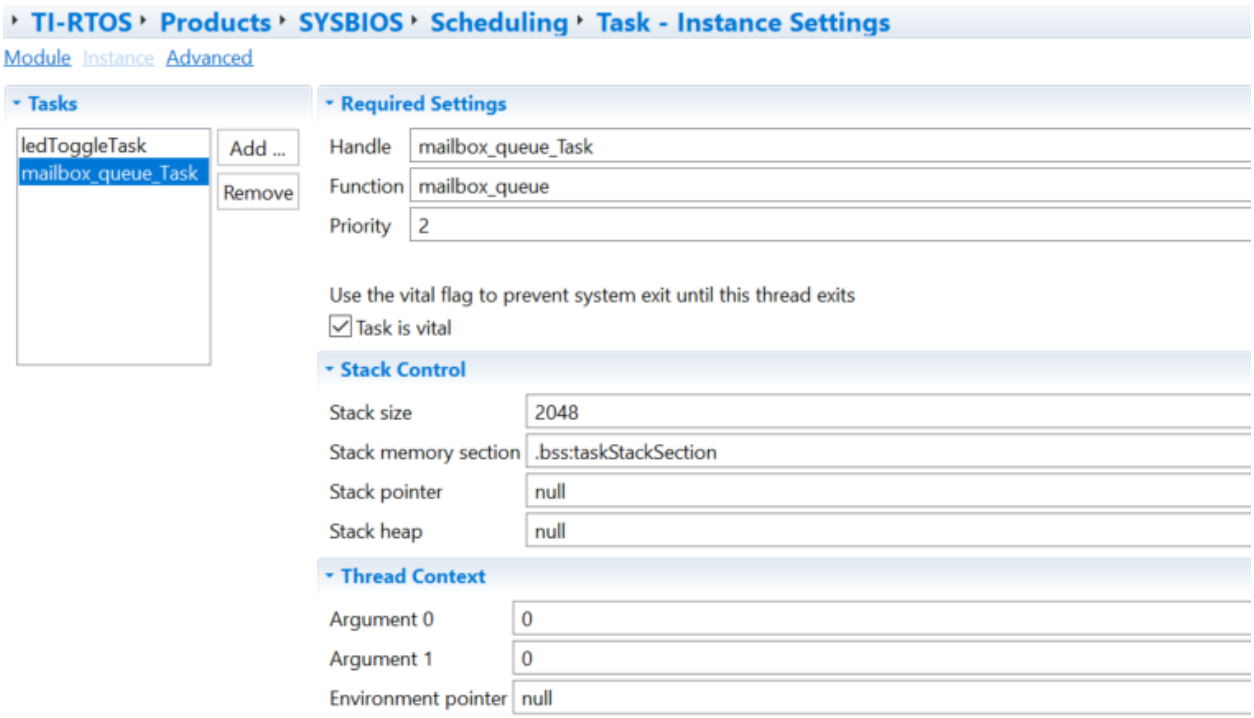
Heap: null

Buffer section: null

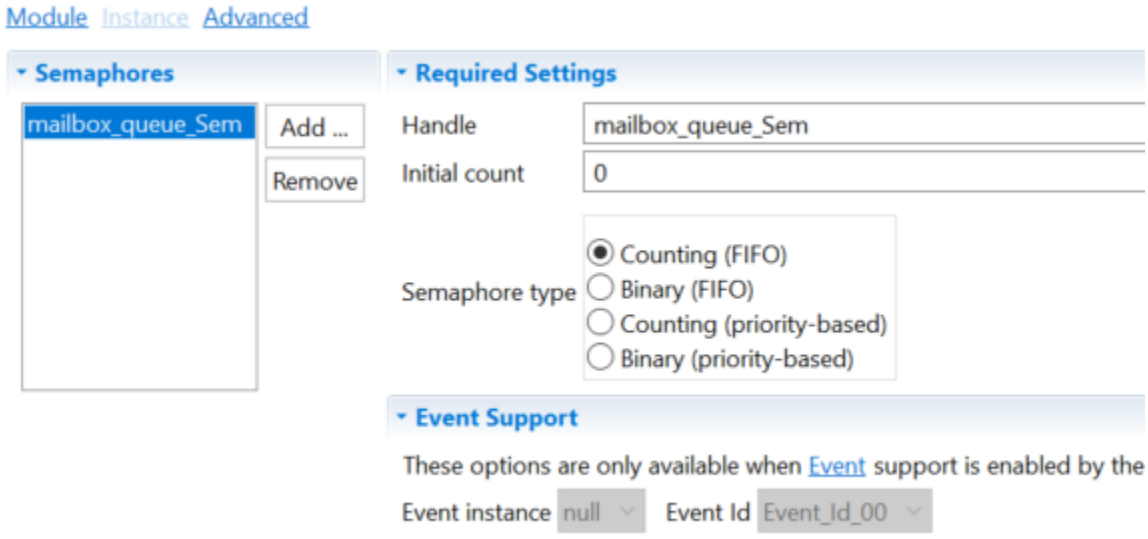
Buffer pointer: null

Buffer size (chars): 0

task

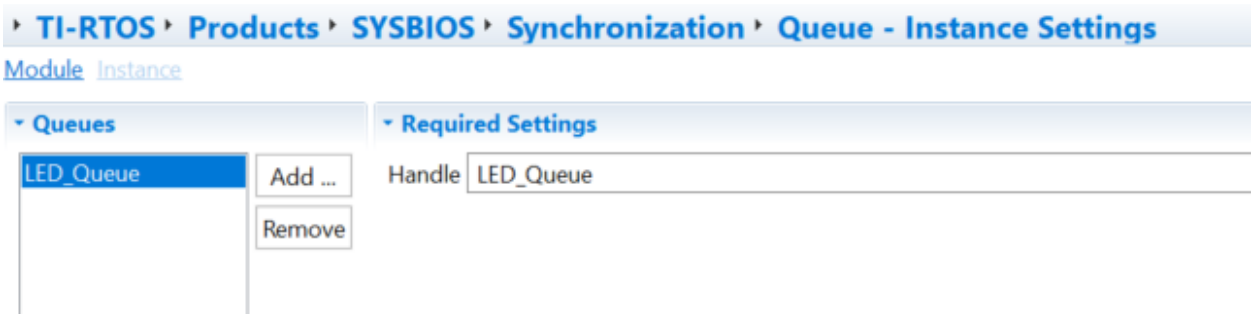


Semaphore

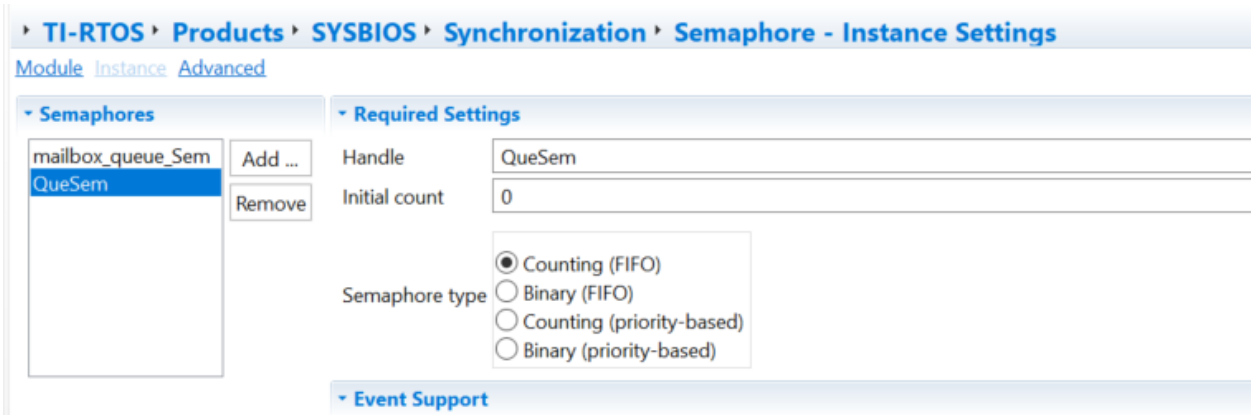


Lab 9b

Queue

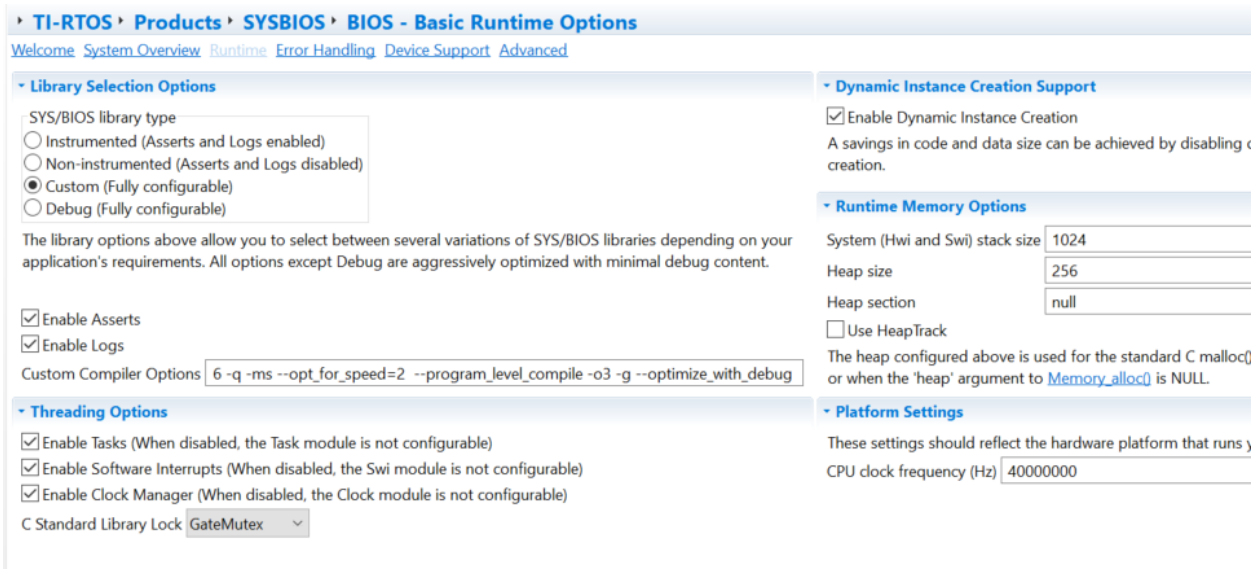


Queue Semaphore



Lab 10

Runtime config



ROV Semaphore

Basic | Detailed | FreeList | Raw

address	label	buf	minBlockAlign	sectionName	totalSize	totalFreeSize	largestFreeSize
0x200...		0x20002620	8		0x100	0xe0	0xe0

Increase Heap Size