EXAMPLE NAME: FREERTOS_EXAMPLE_XMC11

OVERVIEW: This example demonstrates an implementation of a multi-threaded application using FREERTOS APP that send and receive messages through the FreeRTOS message queues and toggles two digital IOs when the queue transaction is successful.

This example is suitable to run on Infineon XMC1000 development boards.

DESCRIPTION:

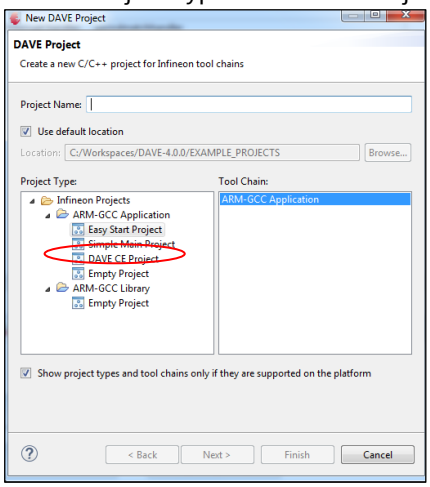
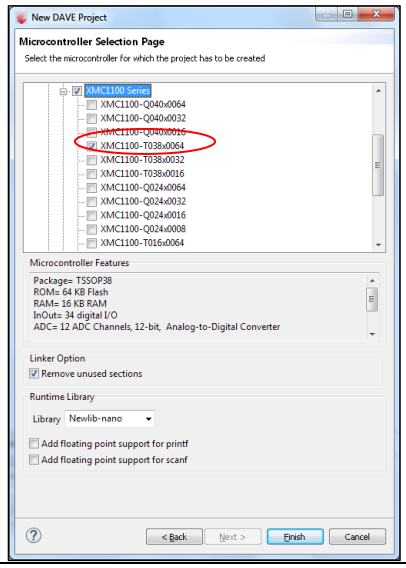
- FREERTOS APP toggles two LEDs connected to P0.5 and P0.6 at 1 Hz frequency when messages through the FreeRTOS message queues are send and received successfully in the multi-threaded environment.

REQUIRMENTS:

Boards Required: XMC1100 CPU Board (Order Nr: KIT_XMC11_BOOT_001)

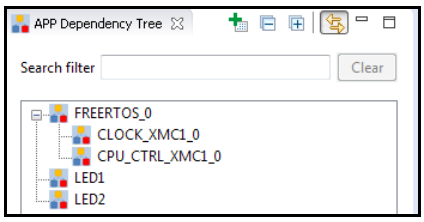
HOW TO CREATE THE PROJECT:

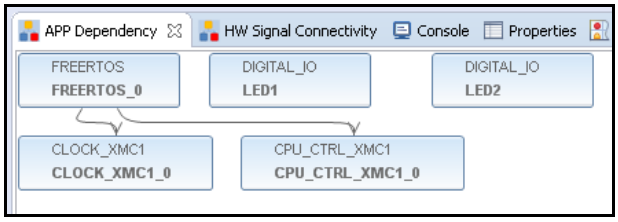
1. Open the DAVE CE and use  "Add IDE New Project Wizard" on the toolbar to add a new DAVE Project.

Enter Project Name Select "Project Type ➔ DAVE CE Project"	Select Microcontrollers ➔ XMC1100 Series ➔ XMC1100-T038x0200
	

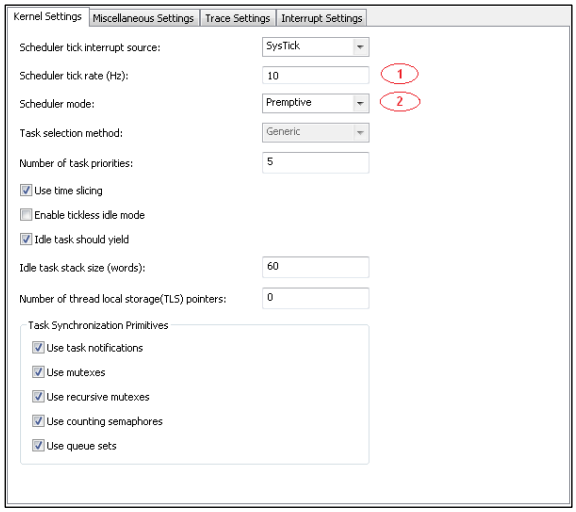
2. Use the "Add New APP" in the toolbar to add 1 instance of FREERTOS and 2 instances of DIGITAL_IO APPs. Configure the APP instances with the following configurations.

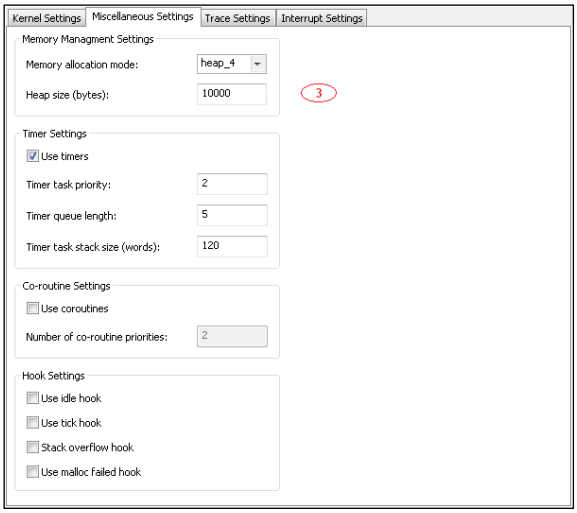
Views: APP Dependency Tree and APP Dependency



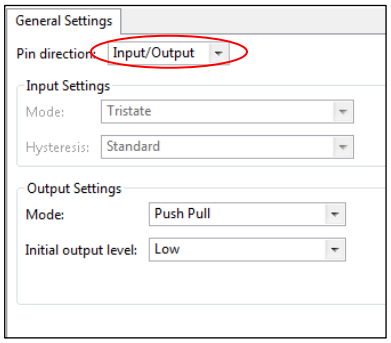


FREERTOS:





DIGITAL_IO (LED0 and LED1):



3. Use the "Manual Pin Allocator" found in the toolbar, configure the output pins for the LEDs.

APP Instance Name	Resource	Port-Pin	Pin Number
◢ LED1			
	pin	(P0.6)	#23
◢ LED2			
	pin	(P0.5)	#22

4. Generate the code for configurations made and change main.c accordingly.
5. Build and download to the microcontroller.

HOW TO TEST:

Download and run the demo in the microcontroller.

OBSERVATIONS:

- For every second, the LEDs toggle when a message from the RTOS message queue is sent and received. This toggling pattern repeats.

HINTS WHEN MIGRATING EXAMPLE TO OTHER DEVICES IN THE SAME XMC FAMILY:

Ensure that the assigned pins P0.5 and P0.6 are available in the target device.