

ThreadX RTOS Support

Maximize program flow visibility with SourcePoint™ for ARM debugger in ThreadX related designs. SourcePoint has always incorporated best-of-class features and now support for ThreadX RTOS to track threads, timers, queues, semaphores, mutexes and other OS services.

Today's System-on-chip (SoC) designs are often complex enough that development on bare metal will not meet the design parameters and the design requires an OS. Many designs require a light, flat OS to conserve space and be responsive enough to meet the real-time challenge of the design. ThreadX is a RTOS that meets the criteria for many such design. SourcePoint™ now incorporates the ability to view OS resources so the developer can examine the resources that are application relevant.

Resource Tracking

Tracking or breaking on a thread is a requirement for most developers but that is only part of the picture (Figure 1).

Often the breakpoint leads to other questions about the state of other threads. (Figure 2) Why is thread 3 in a sleep state? Or why is thread 4 block on a semaphore? Is it the correct semaphore?

SourcePoint allows the developer to browse the OS resources and interrogate the threads to learn more about the state of the thread by examining the stackframe. Understanding the processing states of a given thread is critical to understand the

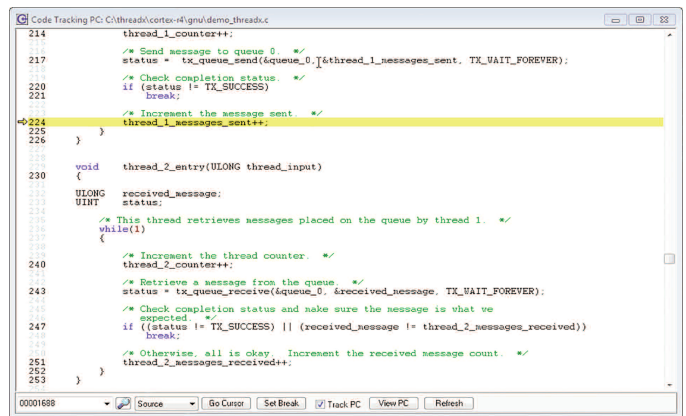


Figure 1: Tracking or Breaking on a Thread

entire multithread environment. The thread states supported by ThreadX are shown in Figure 2.

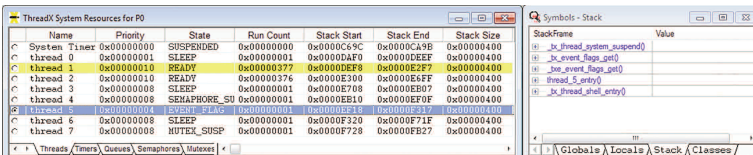


Figure 2: Thread State View

Examining thread states in combination with other OS resources such as timers, semaphores, memory pools and mutexes (Figure 3) all add a better view of the program state and clarity for bug discovery.

To serve the needs of different types of design teams that may be developing a wide range of applications, two ASSET Arium run-control probes support the SourcePoint™ ARM debugger.

The Arium LC-500Se is a cost-effective run-control probe for debugging embedded application on ThreadX application code running on ARM processors.

The Arium LX-1000 Trace Port Analyzer supports extensive external storage of two gigabytes for trace results. Software and firmware engineers can thoroughly and effectively examine the trace results stored in the LX-1000 to identify the precise location of the cause of a bug in the code.

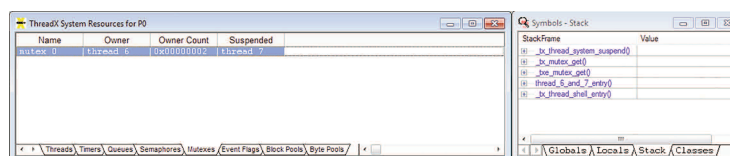


Figure 3: Mutexes

