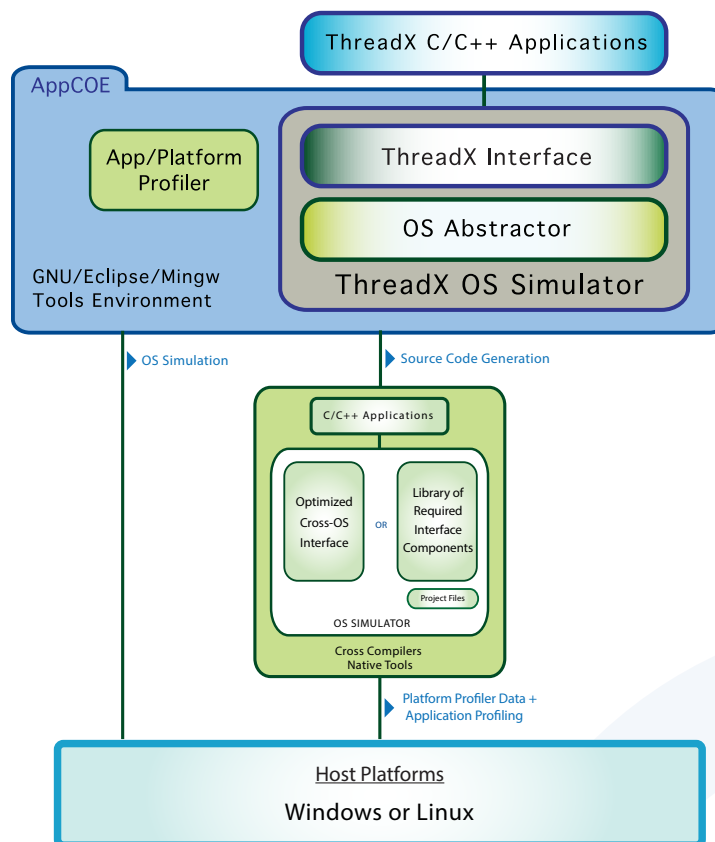# ThreadX
⌀S SIMULATOR®

DEVELOP AND TEST ON A HOST MACHINE WITHOUT TARGET HARDWARE

MapuSoft's ThreadX OS Simulator allows engineers to develop and test ThreadX® applications on Windows or Linux host environments. ThreadX OS Simulator eliminates the need for the ThreadX OS as well as the requirement for expensive target hardware during development. Without the need for those components, development and testing can begin much earlier. The result is lower licensing costs, reduced hardware requirements and a shorter time to market.

ThreadX OS Simulator also provides a virtualized test platform to simulate a system of applications interacting with each other on one or more CPU cores through simulated devices. Optionally, ThreadX OS Simulator is available with source code to simulate ThreadX® applications integrated with native tools/software on Windows or Linux target environments.
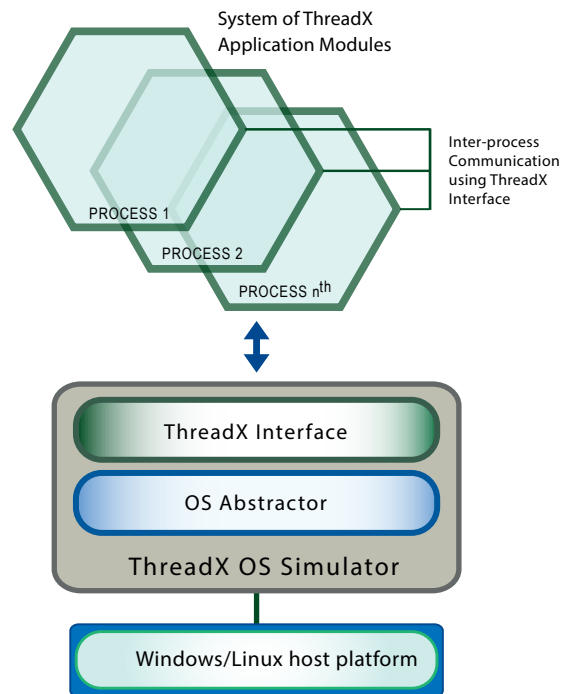
USING OS SIMULATOR AS A DEVELOPMENT PLATFORM

ThreadX OS Simulator is integrated with AppCOE, an Eclipse-based framework packaged with CDT, BIRT and GNU x86 tools, providing a state-of-the-art IDE for development and testing. ThreadX OS Simulator provides the following features when used as a development platform:

- Allows you to simulate real-time applications on Windows or Linux hosts by hardening and optimizing the underlying OS platform
- ThreadX and OS Abstractor Interfaces in non-source are provided in object format for development, simulation, testing and integration of ThreadX applications on a x86 host environment
- Optionally, the ThreadX and OS Abstractor Interface libraries are available in full source code format for use with target native tools/software on Windows or Linux
  - > Source code option allows for gathering profiler data regarding the application and the Interfaces so that they can be optimized

USING OS SIMULATOR AS A VIRTUALIZED TESTING PLATFORM

System of ThreadX
Application Modules

PROCESS 1

PROCESS 2

PROCESS n^{th}

Inter-process
Communication
using ThreadX
Interface

ThreadX Interface

OS Abstractor

ThreadX OS Simulator

Windows/Linux host platform

ThreadX OS Simulator provides the ability to simulate, test and run an entire system of C/C++ ThreadX applications on a Windows or Linux host. Host-based testing offers more hardware resources, less complexity and lower costs when compared to testing on a target platform. ThreadX OS Simulator provides the following features when used as a virtualized testing platform:

- Ability to do modular testing
  - > Allows applications to be broken down into separate processes with dedicated heap memory and kernel resources so that individual modules can be debugged further without crashing others
  - > Can load or re-start other processes dynamically from within an application or statically load them from command prompt
  - > Simulate interacting applications with each other on one or more CPU cores using ThreadX and OS Abstractor Interfaces for inter-process communication
  - > Shared tiered memory pools allow effective application-level data communication with zero copy and without having to pass through physical or virtual devices
- Easy to develop a prototype by creating low-level simulated devices using OS Abstractor APIs

RELEVANT LINKS

- You can find the list of supported ThreadX APIs here:
  http://www.mapusoft.com//wp-content/uploads/documents/threadx-os-simulator.pdf

- You can find the list of supported OS Abstractor APIs here:
  http://www.mapusoft.com/wp-content/uploads/documents/Release_Notes-OS-Abstractor-APIs.pdf

- A free evaluation can be downloaded here:
  http://mapusoft.com/downloads/

- For any technical or sales questions please submit a ticket at the MapuSoft support site at this link:
  http://mapusoft.com/support/

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