

Linux/POSIX INTERFACE

OS Changer Linux/POSIX Porting Kit is a C/C++ source-level virtualization technology that allows you to easily re-use your software developed for Linux/POSIX API's on another OS, while providing real-time performance. It eliminates the manual porting effort, saves money and shortens the time to market. OS Changer can also be used to simulate the Linux/POSIX Interface on a host machine. OS Changer Interface connects to your existing application that was developed on Linux/POSIX, while the OS Abtractor Target Specific Module (specific to your target OS) provides the connection to the OS you are moving to.

OPTIMIZED CODE GENERATION: OPTION ONE

- Legacy porting tool to easily import your application into AppCOE
- Perform your porting work on an Eclipse-based Windows or Linux host machine with provided GNU tools for x86
- Generate optimized Linux/POSIX Interface code for your target, specific to your application
- Generate project files for your target IDE/tools environment
- Enable target profiling of the Linux/POSIX Interface and of the application functions to collect valuable performance data and generate comparative performance reports
- Selectively optimize each Linux/POSIX Interface function for performance based on its usage in your application
- Automatically generate initialization and configuration code based on the settings you chose in the GUI-based wizard

FULL SOURCE PACKAGE GENERATION: OPTION TWO

- Use with your preferred IDE/tools instead of the provided AppCOE Eclipse-based environment
- Provides a Porting Kit in a source code format which contains all the Linux/POSIX Interface functions for a specific target OS
- Requires manual configuration and initialization instead of using the AppCOE GUI-based wizard

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STEP ONE • Choose an option

Option One
 Optimized Code Generation

 Your Linux/POSIX App:
 Import using the legacy
 porting tool in AppCOE

 Porting steps:
 Replace headers, Combine main ()

 Run/debug application
 using emulator on host

 Configure target OS, Profiler,
 Interface Optimizer & system settings

 Generate code
 for target OS

 Output:
 • Unmodified application source
 • Linux/POSIX Interface source

Native compiler

 Output:
 • OS Abstractor API objects/library
 • Linux/POSIX API objects/library
 • Application objects/libraries

Continue to STEP TWO

Option Two
 Full Source Package Generation

 Your
 Linux/POSIX App

 Porting steps:
 Replace headers,
 Combine main ()
 and Initialize app

 Native
 compiler

 Generate source
 package from AppCOE
 and perform manual
 configuration

 Output:
 • OS Abstractor API library
 • Linux/POSIX API library
 • Application objects/libraries

Continue to STEP TWO

STEP TWO

Linker

 Your
 Linux/POSIX App
 executable

 Download/run
 on your target OS

 Generated Profiler
 data (optional)

 View data using
 AppCOE Profiler

Technical Highlights

Includes a Process Feature

- > Port your application to a single or multiple processes utilizing the user shared region provided for your global variables
- > Create a new process by compiling the application separately or by launching it from your main application
- > Provides software-based process features, even if the underlying target OS does not offer support
- > Applications can pre-allocate heap memory during process creation
 - * Set maximum limits regarding the amount of heap memory each application can use to prevent applications from using up all of the system memory and impacting other applications

API Flexibility

- > OS Abtractor APIs also available for use in your Linux/POSIX application
- > OS Changer Linux/POSIX Interface can be used within a single or across multiple applications

Thread Pooling

- > Applications can pool threads to increase platform robustness and performance by eliminating the overhead associated with actual task creation and task deletion at run-time

Mission Critical Features

- > Applications have the ability to asynchronously recover from fatal software errors through a soft reset by rolling the stack back to the start of the application

Highly Scalable

- > The AppCOE GUI-based wizard reads your application to custom generate optimized Linux/POSIX Interface code that is specific to your application resulting in increased performance and reduction of memory footprint

Target Hardware Independence

- > Products support any target hardware supported by your target OS architecture, including 32/64 bit & SMP/UP architectures

In-House OS Support

- > Can easily be extended to support your in-house OS

Linux/POSIX Interface API Coverage & Target OS Support

You can find the supported Linux/POSIX APIs here:

http://www.mapusoft.com/wp-content/uploads/documents/Release_Notes-POSIX-APIs.pdf

Below are the target operating systems supported by the Linux/POSIX Interface:

| | | | |
|------------|----------------|--------------------|------------|
| Android® | LynxOS-178® | QNX Neutrino RTOS® | µC/OS III™ |
| eCOS® | micro-ITRON | RT Linux® | Unix® |
| LynxOS® | Freescale MQX® | Solaris® | VxWorks® |
| LynxOS-SE® | NetBSD® | ThreadX® | Windows® |
| | Nucleus® | FreeRTOS™ | In-House |

- A free evaluation can be downloaded here:
<http://mapusoft.com/downloads/>
- You can contact MapuSoft to request a license key for evaluation here:
<http://mapusoft.com/contact>
- User manuals & technical documentation can be found here:
<http://www.mapusoft.com/techdata/>
- For any technical or sales questions please submit a ticket at the MapuSoft support site here:
<http://mapusoft.com/support/>