

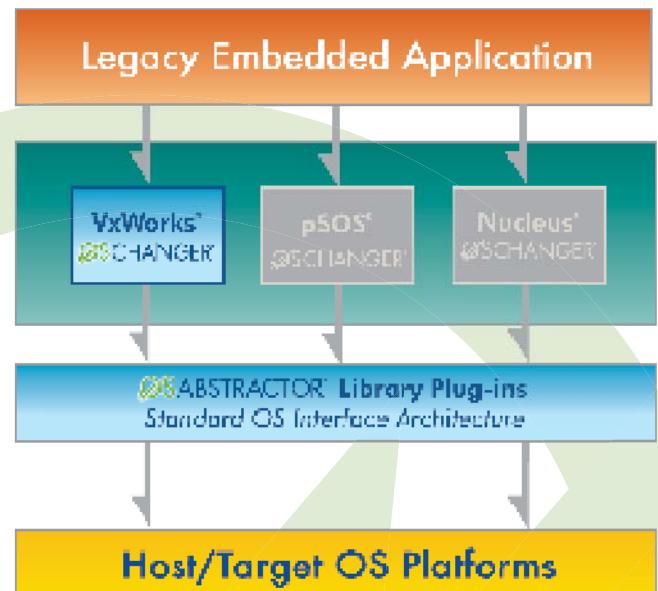
Change Your OS - Keep Your Code

The OS Changer family of products gives developers the freedom to switch operating systems while leveraging on their existing code and knowledge base to protect their software investment. VxWorks OS Changer gives developers the ability to reuse VxWorks applications on different operating systems.



VxWorks OS Changer Highlights

- Protect your software investment by re-using your VxWorks code
- Reduce time to market by migrating VxWorks code to a standard OS interface architecture
- Protect your knowledge-base by using familiar APIs and eliminate the learning curve on the new OS platform
- Eliminate dependency on a single OS vendor and switch to
 - An OS that meets your performance and memory footprint needs
 - An OS that offers better tools, middleware/drivers and support
 - An OS that supports your next generation silicon
- Reduce ongoing development and maintenance cost
 - Develop target specific code on a host platform
 - Re-use one set of code across multiple host & target OS platforms
 - Break down VxWorks applications into manageable pieces to reduce complexity and add module protection
 - Use same APIs for inter-task and inter-process communications
- OS Changer is highly optimized for each specific OS platform
- Eclipse-based host environment is available to port VxWorks applications using OS Changer in OS PAL (refer to the OS PAL datasheet)
- OS Changer includes access to the BASE OS Abstractor API features to allow development of highly portable applications (refer to the OS Abstractor datasheet)
- Additionally, POSIX or open source Linux code can be reused on a new OS platform with POSIX OS Abstractor (refer to the POSIX OS Abstractor datasheet)
- VxWorks OS Changer is offered royalty-free with source code



Using VxWorks OS Changer

OS Changer is designed for use as a C library. Services used inside your application software are extracted from the OS Abstractor libraries and are combined with the other application objects to produce the complete image. The following are the porting steps:

- Indicate the target OS and other configurations in the usr.h file provided by OS Changer
- Include the OS Changer header files instead of the pSOS header files in your source code
- Configure the BSP code provided by the target OS vendor to make sure the OS will run properly on your target platform
- Compile and link your application with the OS Changer libraries and header files. Refer to the standard demo application for additional information about the project settings.
- Resolve all compiler and linker errors if any
- Port low-level drivers to target OS (or use a native one if available)
- Download the application image to the target system and let it run
- Please refer to the programming manual to fix any run time errors

VxWorks OS Changer API Support

The table below lists the VxWorks API support offered across various OS platforms. MapuSoft's supported target operating systems include: VxWorks® 5x/6x, Windows® CE/Mobile/XP/Vista, Linux®/RT Linux®, LynxOS®/LynxOS-SE®, MQX®, Solaris®, Unix®, Nucleus®, µITRON®, ThreadX®, T-Kernel®, QNX® and eCOS®. Please note that MapuSoft may provide further support to include additional APIs or operating systems not listed. For a current listing visit <http://mapusoft.com/products/offerings> or email: info@mapusoft.com

VxWorks APIs			
<i>Task Functions</i>		<i>Device I/O</i>	<i>Semaphores</i>
taskSpawn	taskVarSet	IsolInit	semGive
taskInit	taskVarDelete	isoDrvInstall	semTake
taskActivate	taskVarInfo	isoDrvRemove	semFlush
taskDelete	taskHookInit	isoDevAdd	semclear
taskDeleteForce	taskCreateHookAdd	isoDevDelete	semCreate
taskSuspend	taskDeleteHookAdd	isoDevFind	semDelete
taskResume	usrRoot	isoFdValue	semInfo
taskRestart	exit	creat	semBCreate
taskPrioritySet		unlink	semCCreate
taskPriorityGet	<i>Queues</i>	remove	semMCreate
taskLock	msgQCreate	ioDefPathSet	semMGiveForce
taskUnlock	msgQDelete	close	
taskSafe	msgQSend	read	<i>Clock</i>
taskUnsafe	msgQReceive	write	tickGet
taskDelay	msgQInfoGet	ioctl	tickSet
taskOptionsSet	msgQNumMsgs	open	tickAnnounce
taskOptionsGet		ioDefPathGet	sysAuxClkDisable
taskName	<i>Memory Partitions</i>	chdir	sysAuxClkConnect
taskNameTold	memPartCreate	getcwd	sysAuxClkRateSet
taskIdVerify	memPartAlloc	getwd	sysClkRateGet
taskIdSelf	memPartAlignedAlloc		usrClock
taskIdDefault	memPartFree	<i>Kernel</i>	
taskIsReady		kernelVersion	<i>Error Handling</i>
taskIsSuspended	<i>ANSI</i>	kernelTimeSlice	errnoOfTaskSet
taskTcb	malloc	kernellInit	errnoGet
taskIdListGet	free		errnoOfTaskGet
taskInfoGet	printf	<i>Watch Dog Timers</i>	errnoSet
taskVarInit	sprintf	WdStart	
taskVarAdd		WdDelete	<i>Events</i>
taskVarInit		WdCreate	eventReceive
taskVarAdd			EventSend
taskVarSet			
taskVarDelete			
taskVarInfo			
taskHookInit			
taskCreateHookAdd			
taskDeleteHookAdd			



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Porting embedded applications from one OS to another OS is often an underestimated, tedious and time-consuming task. It also requires expensive and skillful resources that take away the focus on building your product. Embedded applications demand more and more performance, scalability and development flexibility from the underlying OS. Developers are forced to change their OS or extend support for more than one OS quickly as the market demands. Developers find that they need to leverage the existing software and knowledge base when migrating to next generation platforms. This has brought a need for the development of highly re-usable software that can run across proprietary and multiple commercial operating systems as well as utilizes open source components or other low cost alternatives.

It's not easy for developers to adapt existing software to a new OS or enable it to support multiple operating systems without incurring high costs and increasing time to market entry. MapuSoft offers OS PAL, OS Abstractor and OS Changer products to help developers streamline development processes and re-use their embedded software on one or more operating systems. MT offers porting, integration, support and training services to help developers easily migrate from legacy platforms to the next generation.

MapuSoft Custom Services

- Provide full porting, integration and validation services
- Extend OS Changer APIs
- Migrate in-house abstraction to OS Abstractor framework
- Add OS Abstractor support to your proprietary operating system
- Offer on-site and off-site training on operating systems and advanced porting techniques

FREE OS Changer Trial Software

Go to: www.mapusoft.com/downloads

- Receive 30 days of FREE technical support!

MapuSoft Technologies, Inc.

1301 Azalea Road, Mobile, AL 36693 USA

Toll Free: 1-877-MAPUSOFT (1-877-627-8763)

Tel: 251-665-0280, Fax: 251-665-0288

www.MapuSoft.com

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