VxWorks 7

Real-Time Operating System for the Internet of Things

Features

- Lower system development costs with a single RTOS that scales
- Broad connectivity
- Complete security for connected devices
- Expandable and upgradable architecture
- Lower risk and fast integration of third-party technology
- Easier upgrades and less testing

Introduction

Seize Opportunities Offered by the Internet of Things

VxWorks 7, the breakthrough, next-generation version of VxWorks, is a modular, configurable, and expandable platform for connected devices, engineered to help you succeed in the IoT era.

Feature Details

Lower system development costs with a single RTOS that scales

VxWorks is the RTOS foundation for successful development of very small devices, large intelligent connected systems, and everything in between. It is scalable to meet your project's unique memory footprint, functionality, and processing power requirements. You control how much of the operating system you need. For example, VxWorks includes an optional, small-profile microkernel that is built on the same platform as standard VxWorks, so that higher- and lower-end devices can be efficiently developed as one connected system.

Broad connectivity

Connectivity is a key requirement of the IoT, and VxWorks provides support for industry-leading standards and protocols, and delivers high-performance networking capabilities out of the box. VxWorks adds connectivity protocols such as USB, CAN, Bluetooth, and Continua, as well as the modularity that can help bring many previously disconnected devices online without reworking the core of their embedded software.

Complete security for connected devices

IoT demands pervasive connectivity that exposes devices and systems to more security risks than ever before. VxWorks allows you to design your embedded system to the necessary level of security by leveraging a comprehensive set of built-in security features for the development, boot and execute, operation, transmission, and idle/power down stages.

Expandable and upgradable architecture

The modular, future-proof architecture of VxWorks separates the core kernel from protocols, applications, and other packages, which enables you to enrich your products with new features and capabilities as standards and market requirements evolve—without retesting or recertifying the entire system.

Lower risk and fast integration of third-party technology

VxWorks' unmatched ecosystem of readily available tested and validated third-party technologies enables you to differentiate your product offering with leading-edge features and capabilities and bring devices to market faster, while reducing risks and development costs.

Easier upgrades and less testing

The new modular VxWorks architecture enables you to promptly implement upgrades and bug fixes as they pertain to packages and compilers without having to change or retest the entire system, including the operating system core.

Better reliability with state-of-the-art memory protection

Memory management unit (MMU)-based memory protection increases reliability. VxWorks incorporates a process-based model that provides user-mode application execution in addition to its traditional kernel-mode execution.

Time partitioning

An enhanced scheduler enables time partitioning for extreme reliability, preventing applications from overloading the CPU.

Smaller size, lower weight, and reduced power consumption

Technological innovations in embedded processors, such as multi-core support and improved power management, have opened the door for increased system consolidation for embedded systems. VxWorks platforms provide flexible, multi-core support for the latest embedded processors and systems on chips (SoCs), offering an ideal consolidation platform to reduce size, weight, and power (SWaP).

Ensure Compliance with Safety and Security Requirements for Certified Environments and Mission-Critical Systems

VxWorks trusted system platforms have a proven track record in safety- and security-certified environments. A high-reliability RTOS, VxWorks provides hard, real-time performance and determinism along with the certification required by the highest safety and security standards. You can count on VxWorks to run forever, error-free.

Leverage Your Existing Investment in VxWorks

VxWorks 7 is designed to ease migration from earlier versions of VxWorks such as VxWorks 6.x. VxWorks 7 kernel supports the VxWorks 6.x kernel operating environment. Most board support packages (BSPs), drivers, and user applications developed for or ported to VxWorks 6.x will run in the VxWorks 7 kernel.

Smarter Development with the Workbench Development Suite

Using standards such as Eclipse, CDT, and TCF, Wind River Workbench offers best-in-class development and debugging tools along with cutting-edge system analysis tools for optimizing the VxWorks environment.

Specifications

Backward-compatibility of VxWorks 7 APIs with VxWorks 5.5, 6.0, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, and 6.9

Supported BSPs

BSP name	Processor Family	Certification Level	Hardware Manufacturer	Board
VxWorks 7 BSP for AMD G Series and R Series	AMD	Wind River Partner Program Certified	Advanced Micro Devices, Inc.	AMD G Series and R Series Evaluation Platform
VxWorks7 Unified BSP for Intel® 64 bit Architectures (Celeron, Atom, Core, Xeon)	X86-64	Wind River Product	Intel® Corporation	IA architecture boards
VxWorks7 BSP for Intel Quark SoC X1000	x86/Pentium®/IA-32	Wind River Product	Intel® Corporation	Quark architecture boards

Minimal Requirements

Supported target architectures and processor families

The newly released VxWorks 7 supports the following target architectures:

- ARM 11 / 11 MPCore / 9 / Cortex A9 MPCore / Cortex A8

- Intel® Pentium® family / Quark™ / Xeon® / Xeon® LV / Core™ / Core™ 2 Duo / Atom™

- PowerPC 86xx, 8641d / 85xx, 8572 / 83xx / 74xx / 7xx / 60x / 44x / 40x / QorIQ P4080 / QorIQ P20xx

Ordering Information