



ROS 2 for VxWorks

Build Cutting-Edge Real-Time Robotic Applications Using VxWorks and Wind River Studio

As digital transformation accelerates, the use of robotics will continue to expand across all vertical markets, from industrial and automotive to medical, warehousing, retail, and more. The exponential growth of new robot use cases requires embedded runtime environments that are more sophisticated, yet easy to assemble. In addition, cloud-based development and deployment technologies are needed to address faster time-to-market and continuous deployment challenges. Robotic uses are quickly evolving into areas where real-time systems, embedded platforms, robots, and connectivity to the cloud are required. Wind River® has a reputation for providing the foundation for hard real-time and deterministic embedded systems with its VxWorks® real-time operating system (RTOS). VxWorks has a proven track record of helping make mission and safety-critical systems a reality in systems including the Mars rovers, jet airliners, medical devices, autonomous systems, factory machines, and other innovative robotic devices.

ROS 2, the newest version of the ROS (Robot Operating System), is a set of open source robotic middleware and tools. It is also the de facto standard software framework for robot application development. It covers a wide range of applications, from small drones with microcontrollers to cloud-based private 5G deployments such as warehouses or autonomous unmanned ground vehicles (UGVs).

New use cases include:

- Real-time container-based applications on edge devices
- Autonomous UGVs
- Digital twins
- 5G-based production environments
- Robot fleet management

The native habitat of ROS 2 is Ubuntu Linux. However, ROS 2 does install and run on other operating systems, such as Yocto Project Linux, VxWorks, Microsoft® Windows®, MacOS, and RHEL.

ROS 2 FOR VXWORKS

Wind River has created a developer project, ROS 2 for VxWorks. While ROS 2 is not technically part of the VxWorks real-time operating system (RTOS) product, ROS 2 for VxWorks provides custom modifications and build scripts to integrate the ROS 2 framework into the RTOS. If robotics platform or application developers would like to take advantage of the modern development workflow provided by VxWorks using SDKs, VSCode, and real-time containers, they can get more information and download details by visiting the [ROS 2 for VxWorks page](#) on the Wind River Labs web page. ROS 2 for VxWorks is also included as a gallery technology in Wind River Studio, a cloud-based DevSecOps platform for embedded development. Additional robotics demonstrations and presentations can be found on the [Wind River resources page](#). For specific questions regarding ROS 2 for VxWorks, visit the [Wind River sales inquiry site](#) for assistance.