



Wind River Studio Test Automation

Wind River® Studio simplifies, expedites, and automates the testing, verification, and validation of embedded OS platforms through cloud-hosted resources.

WHY TEST AUTOMATION?

Test automation is an essential scaling capability for teams developing the complex code required for today's mission-critical intelligent systems, particularly for those participating in a continuous delivery process. For code that is delivered iteratively, constant testing is required to ensure it is production ready at all times. Test automation allows teams to bypass common challenges in linear manual testing, such as waiting for the availability of physical hardware, building tedious or monotonous test plans, deferring or avoiding lengthy or time-consuming tests, and user error.

Effective use of test automation increases the depth and scope of testing, improving the quality of code. Dispersed teams with different testing assignments need 24/7 access to true virtual systems to support unlimited test plans that accurately capture and visualize the "what if" scenarios that trigger faults.

SOLVE THE SCALABILITY CHALLENGES OF EMBEDDED SOFTWARE TESTING

Studio offers a cloud-native framework for automated testing that brings a developer-centric approach to test automation. It allows developers to drag and drop test plans and workflows into their development pipelines, dynamically reserve and schedule virtual lab assets for test execution, and scale the test, QA, and validation of software builds. Through an intuitive user interface, testers can easily create test plans and execute tests at any point in the development lifecycle.

Supported Platforms

- VxWorks®
- Wind River Linux
- Wind River Helix™
Virtualization Platform
- Wind River Simics®
- QEMU
- Sample test plans included

When It Comes to Testing, Sooner Is Better

While the cost of fixing a bug or an error is much lower in the earlier stages of the software development lifecycle, many development teams defer tests because they don't have enough physical hardware for testing or are concerned that long and time-consuming test plans will slow down development.

The High Cost of Inefficient and Insufficient Test Capabilities

A recent study conducted by Cambridge University found that errors in software cost businesses more than \$61 billion annually in lost productivity, recovery, and support costs. Meanwhile, as much as 50% of development time is spent on testing to make sure the code is working as per design, with single defects taking, on average, 13 hours to resolve.

ARCHITECTURE

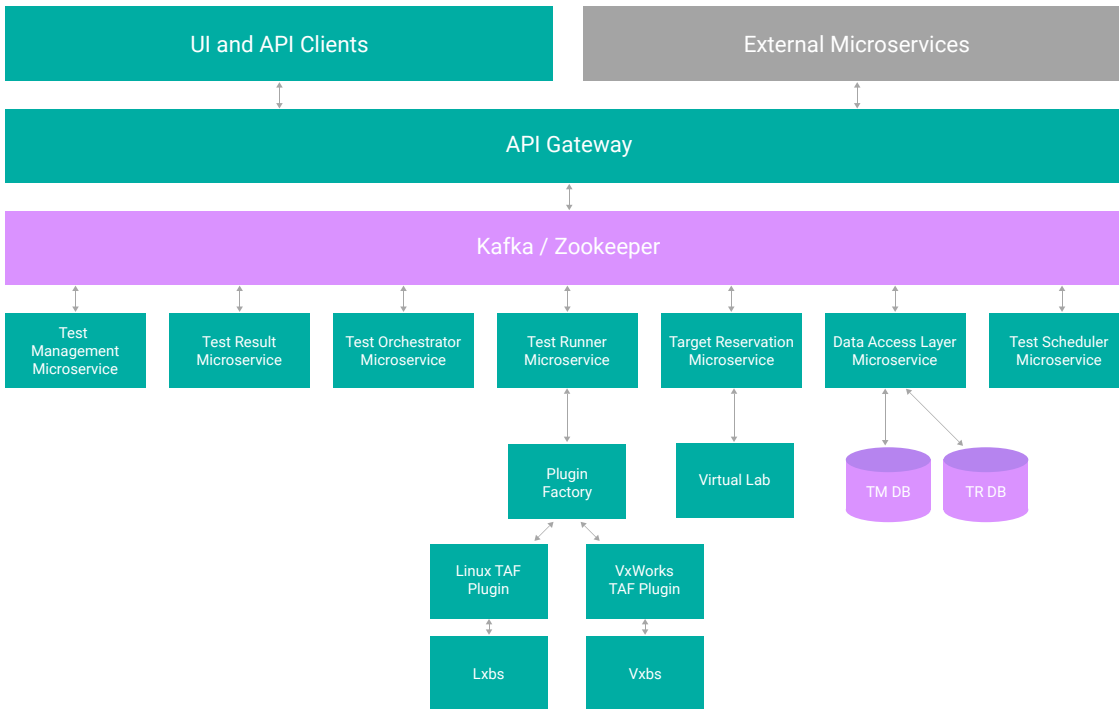


Figure 1. Wind River Studio Architecture for Test Automation

FEATURES AND BENEFITS

- **Test Automation Framework:**
 - Create, manage, and execute automated test plans using a curated collection of test suites for Wind River embedded operating systems, and test against multiple embedded hardware target and build configurations. Capture and store test result artifacts.
 - Automate the testing of multiple operating systems and hardware processors. Test cases can be reused on different builds or configurations without any changes to their logic.
 - Enable team members of all skill levels to create and execute tests and analyze test results through an intuitive user interface and graphical dashboard.
 - Leverage virtual hardware and simulation capabilities in Wind River Studio Virtual Lab, with access to the leading embedded hardware systems and system simulation capabilities.
- **Virtual Lab:** A cloud-native reservation system hosts large-scale embedded hardware simulation resources based on Simics and QEMU. Studio ensures that dispersed development teams have a high availability of embedded targets to debug and test.
- **Digital Twin and Simulation:** Simulate and test complex embedded systems at scale using Simics and QEMU technology, with support for popular embedded hardware models.