



Wind River Studio

CI/CD

With Wind River® Studio CI/CD capabilities, you can bridge the gap between today's software development best practices and the demanding world of embedded software development.

WHY CI/CD?

CI/CD, or continuous integration/continuous deployment, is a software development approach that promotes rapid and frequent deployments by automating many aspects of the software lifecycle. For CI/CD to be successful, development, test, security, and operations teams must collaborate in real time as code moves through this DevSecOps workflow.

AUTOMATE EMBEDDED SOFTWARE DEVELOPMENT IN A CLOUD-NATIVE ENVIRONMENT

Studio is purpose built for developing embedded device software platforms and applications, with cross-compiling build systems, an embedded device test lab, and visibility into the end-to-end workflow to diagnose complex problems in customized pipelines.

The Studio cloud-native environment provides a unique way of automating your embedded software development process using a well-integrated set of tools delivered via a cloud-based infrastructure.

Studio comes with operating environment platforms and a framework to author new build pipelines as well as add to existing build processes using pre-built and custom pipeline blocks. Customized CI/CD workflows can be implemented for platform developers, application developers, and testers.

CI/CD Considerations for Organizations Developing and Deploying Intelligent Systems

Roughly 40% of developers spend from one-quarter to one-half their time maintaining and integrating new technologies into their toolchains (GitLab Inc., 2022). This maintenance and integration burden is compounded by embedded development requirements that can depend on specialized simulation software, compilers, and debuggers necessary for platform development.

Many organizations developing intelligent systems face a shortage of skilled developers who understand embedded systems and the functional safety and security standards for a given industry, or who have the necessary security clearance for specific projects. CI/CD helps scale and accelerate the output of the limited resources of such teams.

ARCHITECTURE

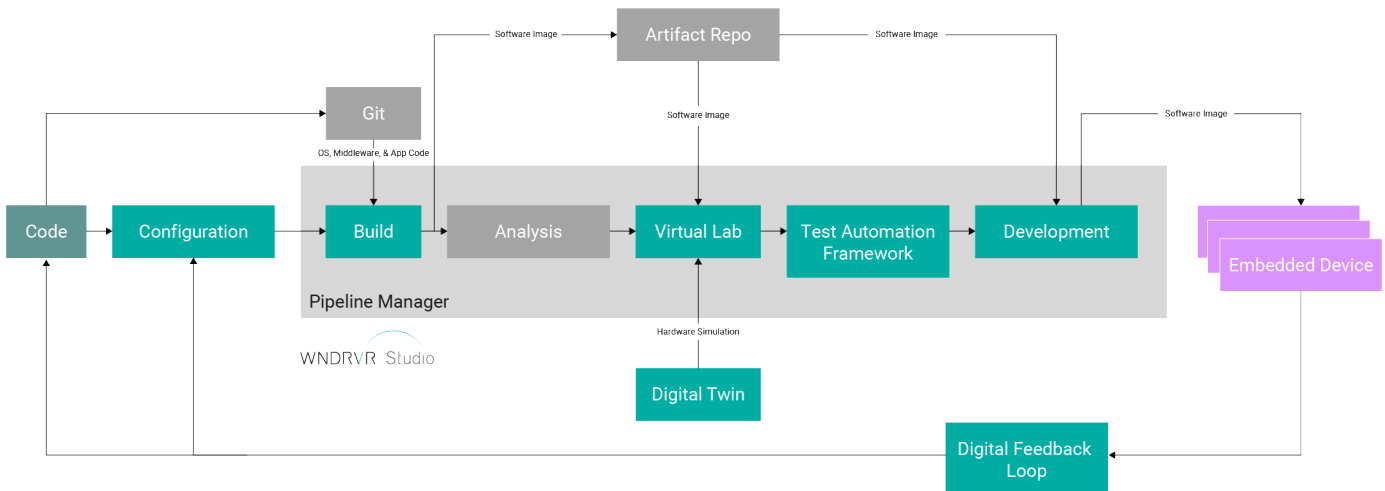


Figure 1. Wind River Studio enables continuous integration and deployment

FEATURES AND BENEFITS

- **Pipeline Manager:** Author new pipelines or add our purpose-built embedded pipelines to your workflow.
 - Customized CI/CD workflows can be implemented for platform developers, application developers, and testers.
 - Increase productivity and get the most out of your development workflows with a one-click process to automate and customize pipelines.
 - Using an advanced visualization tool, you can create multiple development pipelines using interchangeable building blocks that can easily be modified to meet dynamic project needs.
- **Cloud-native development and automation:** Studio provides a unique way of automating your embedded software development process using a well-integrated set of tools delivered via a cloud-based infrastructure. Automate debugging and testing. Inject faults to stress end-to-end intelligent edge systems. Provision, manage, and run all of your team's development assets in the cloud:
 - Virtual boards
 - Trace
 - Scripts
 - Configurations for system of systems
- **Wind River Studio Gallery:** Customize your pipeline automations with curated services and tools from the Studio Gallery environment, or integrate your own proprietary tool using Studio Pipeline Manager, command-line interfaces, and APIs to build customized software pipelines specific to your organization's needs.
- **Built on GitLab:** GitLab was built for Dev, Sec, Ops, and everyone else who cares about your code — including business teams and nontechnical stakeholders — to collaborate and keep moving projects forward. If your team uses another Git Repo, we can integrate with that, too.

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