

Wind River Studio Digital Feedback Loop

Real-Time Analytics and Insights from the Intelligent Edge

Wind River® Studio Digital Feedback Loop optimizes value delivery and operational and maintenance costs through real-time analytics and insights informed by OS-level and application-specific data from the edge. Improve fleet visibility and governance with an open, extensible command-and-control center that securely connects the intelligent edge to your cloud. Identify anomalies and opportunities to improve performance, maintenance, and value delivery through the entire lifecycle, from the cloud to the intelligent edge.

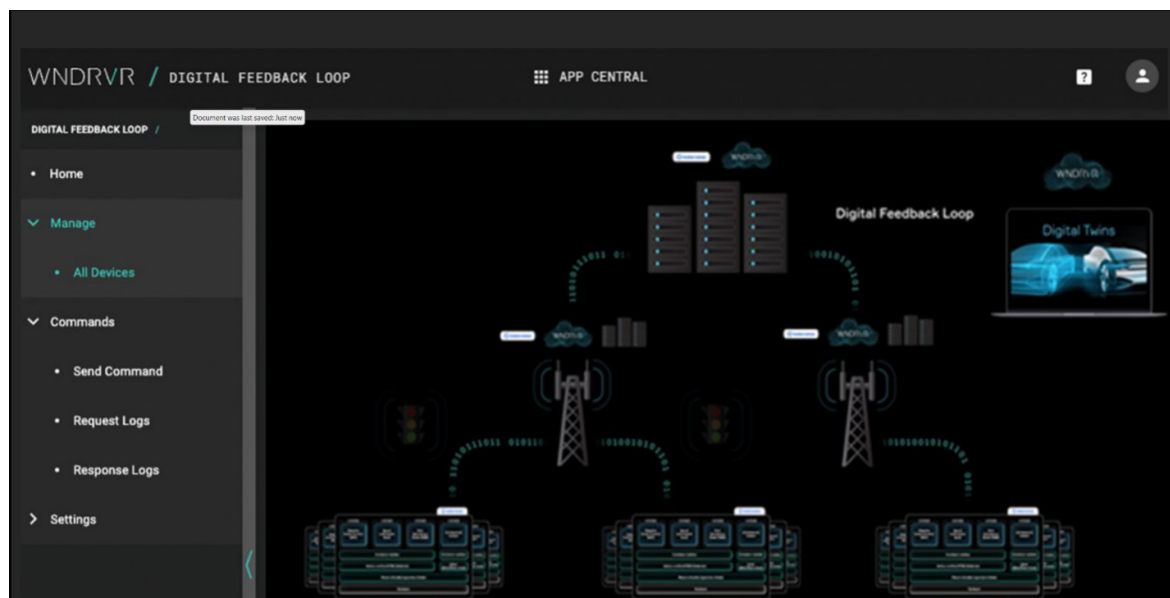


Figure 1. Wind River Studio Digital Feedback Loop provides visibility and management of devices throughout the system lifecycle

BENEFITS

Fleet Management and Governance

Take advantage of continuous, secure access to device inventory, health, and control throughout the system lifecycle, in development and production environments.

Reduced Costs

Identify and respond to performance, usability, and reliability problems early to reduce downtime and operational and maintenance costs.

Increased Satisfaction and Retention

Proactively identify and address inefficient workflows and training opportunities to ensure that users are realizing value.

New Revenue Opportunities

Perform experiments and analyze user behavior to discover new revenue opportunities and deliver more value.

KEY FEATURES

Visibility to Assets at the Edge

The small-footprint Studio Digital Feedback Loop Edge Agent leverages efficient bandwidth management and adjustable telemetry rates to provide reliable, cost-effective, real-time visibility into OS- and application-level status and data from edge devices. Out-of-the-box support for VxWorks® and Wind River Linux ensure better data-driven decisions to optimize the health, performance, and maintenance of fielded systems.

Command-and-Control Center

Studio Digital Feedback Loop provides secure command and control, with role-based access controls and PKI-based secure communications over HTTPS, SSH, and TLS. All data is secure in transit and at rest, and the platform manages certificates and secrets to minimize exposure risks.

Enlist and manage devices at any scale, with flexible access via GUI, CLI, API, and integration with other tools. Robust search and filtering, bidirectional file transfer, and a customizable target command library enable targeted ad hoc and automated actions.

Flexible, Scalable Analytics

Studio Digital Feedback Loop provides a flexible data pipeline with hot, warm, and cold paths that provide real-time, near real-time, and offline data retention and analysis capabilities, respectively. Customizable data schemas enable access to data such as telemetry, logs, images, and events, and retention policies ensure that compliance and budget goals are met. Automatically send alerts and trigger actions at the edge based on analysis results.

Open Architecture

Studio Digital Feedback Loop is based on open technologies such as MQTT and Grafana, preventing cloud lock-in while ensuring compatibility with existing tooling and allowing data migration. While it is optimized for use with the broader Wind River Studio development, simulation, testing, and deployment environments, Studio Digital Feedback Loop includes integration with third-party data management and AI/ML platforms and provides a REST API for extensibility.

USE CASES

Secure Visibility into Fleet and Field Status

Studio Digital Feedback Loop registers all devices, and real-time parameter monitoring maintains continuous visibility into device status from the central Studio Digital Feedback Loop cloud platform.

Preventive Maintenance

Leverage Studio Digital Feedback Loop analytics to identify anomalous device conditions and trigger a maintenance alert or device shutdown.

Usage Patterns and Version Distribution in the Field

Usage data from fielded devices can be analyzed to understand field conditions, which versions are in use, and how products are used.

Experimentation in the Field

Deploy alternative implementations of new capabilities into the field and analyze usage data to evaluate which is more successful.

Improved Scalability

Identify devices with high load and trigger alerts or automated responses to increase capacity.

ADDITIONAL WIND RIVER STUDIO PRODUCTS

Wind River Studio Developer is a cloud-native development, deployment, and operations environment for mission-critical intelligent embedded edge systems. It enables companies to develop, deploy, and operate complex software-defined edge systems using a modern, scalable, and automated environment. It is purpose-built to lower embedded software lifecycle costs, shorten time-to-market, and help create new revenue opportunities.

Wind River Studio Pipelines

Wind River Studio Pipelines helps you create automated workflows for scanning, building, testing, deploying, and updating embedded software projects. Studio Pipelines are cloud-native and enable collaboration and sharing of pipelines as valuable software assets for your software organization. Increase productivity and get the most out of your software lifecycle workflows with tools to create automated and customized software development pipelines. Enable CI/CD processes with software lifecycle pipelines using interchangeable building blocks that can easily be integrated into your existing software development infrastructure and extended to meet dynamic project needs.

Wind River Studio Test Automation

Wind River Studio Test Automation helps orchestrate automated test executions for embedded edge devices. Specifically designed for testing embedded software, Studio Test Automation enables software teams to build and exercise software testing workflows that integrate seamlessly with their existing CI/CD/CT environment. Software teams can manage and execute large numbers of automated tests against virtual and physical targets.

Wind River Studio Over-the-Air Updates

Wind River Studio Over-the-Air Updates helps software teams deploy and update the software on fielded edge devices. It can be employed to distribute platform and application updates to fleets of edge devices. Accelerate time-to-market, extend product lifespan, roll out the latest security updates, and eliminate expensive recalls with over-the-air software updates to embedded devices.

Wind River Studio Virtual Lab

Wind River Studio Virtual Lab accelerates development schedules and reduces costs through earlier, more collaborative and automated testing of intelligent edge systems. Hardware resources remain a rate-limiting step in CI/CD and software testing processes. Virtual Lab's secure, scalable cloud portal enables global teams to create and manage self-service, distributed test environments, including hardware labs and modern simulation tools, with programmatic interfaces for connection and control that improve resource utilization and facilitate automated CI/CD/CT pipelines.

PARTNER ECOSYSTEM

The Wind River partner portfolio includes a large ecosystem of complementary third-party hardware and software solutions to help our mutual customers ease integration, speed development, and enhance functionality in their intelligent systems. The portfolio helps accelerate time-to-market and differentiate platforms with best-of-breed capabilities, while reducing development costs. Visit our partner ecosystem at www.windriver.com/partners for a full list of our partners and their products.

PROFESSIONAL SERVICES

The CMMI Level 3–rated Wind River Professional Services organization leverages years of system design and development expertise to work collaboratively with customer design and program teams. Professional Services ensures customer success with premium onboarding and enablement services, helping improve customer software workflows, interpret system requirements, and architect platform options. Professional Services also provides recommendations for meeting business, technical, and program goals. For more information, visit www.windriver.com/services.

CUSTOMER SUPPORT

Wind River Studio is backed by our award-winning global support organization. We offer live help in multiple time zones, the online Wind River Support Network with multifaceted self-help options, and optional premium services that provide developers the fastest possible time-to-resolution. For more information, visit www.windriver.com/support.

EDUCATION SERVICES

Wind River offers instructor-led, on-demand, and mentored learning, including anytime, anywhere access to online subscription-based e-learning. For more information, visit www.windriver.com/education.

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