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Ushering in an Era of IT/OT Convergence

Wind River Cloud Platform and ServiceNow Transform Industrial Operations

EXECUTIVE SUMMARY

In industries from manufacturing to energy, from automotive to aerospace, executives and engineering leaders are urgently seeking innovative solutions to meet rising demands for operational resilience, strong security, and seamless integration of information technology (IT) and operational technology (OT). Platforms including VMware, Red Hat, and Nutanix often fall short, lacking the scalability and comprehensive integration needed to modernize OT operations with IT concepts.

Wind River, in collaboration with ServiceNow and major global systems integrators, offers next-generation IT/OT solutions based on Wind River® Cloud Platform and ServiceNow's workflow automation. The combined solutions enable highly automated, actionable intelligence, which enhances efficiency and compliance while setting new standards for industrial operations.

BREAKING DOWN BARRIERS BETWEEN IT AND OT

Modern industries are increasingly challenged by the growing gap between their IT infrastructure and the OT used on factory floors, remote sites, and complex networks. OT devices are often kept separate from the broader enterprise IT system.

Having fragmented setups can introduce security risks and complicate management. Manufacturing OT devices and control functions often have limited resources, are poorly managed, and lack effective connections to cloud platforms, which hampers operational efficiency and scalability. Siloed IT and OT infrastructures often duplicate functions, resulting in increased operational costs and potential complications. The gap also restricts the deployment of microservices and slows innovation, hindering companies trying to progress toward Industry 4.0 goals.

In short, the lack of seamless coordination between IT and OT systems acts as a barrier to unified control, comprehensive data sharing, and streamlined workflow automation.

To address these issues, Wind River hosts ServiceNow management, instrumentation, and discovery (MID) servers on both Cloud Platform and eLxr Pro™. Combined with existing OT vendor solutions, this approach enables unprecedented levels of operational workflow automation, asset security, and management. Integrated features for IT operations management and IT Infrastructure Library (ITIL) provide real-time control and visibility into OT devices, while automated deployment and lifecycle management significantly reduce manual effort and dependence on costly hardware, minimizing downtime. Additionally, exporting telemetry from OT devices opens new possibilities for AI/ML capabilities that were previously out of reach.

The IT/OT Architecture

Wind River and ServiceNow technologies create seamless integration between the worlds of IT and OT
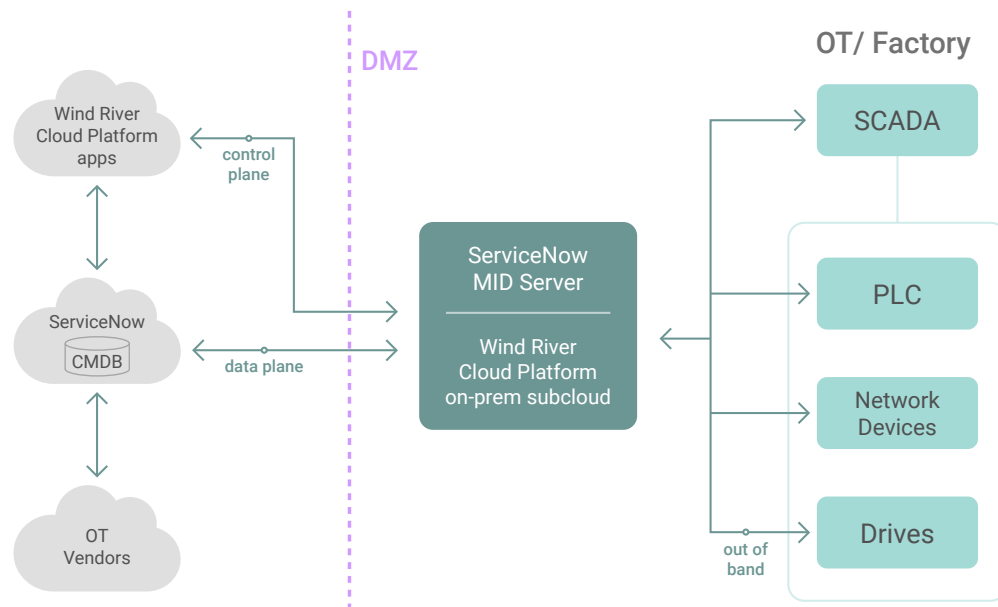
EDGE PROCESSING IN OT ENVIRONMENTS

Legacy systems often hinder digital transformation efforts with outdated, proprietary interfaces that have limited network access and bandwidth. With these restrictions, it can be difficult to obtain the valuable operational data needed for accurate predictive maintenance and real-time analytics.

Cloud Platform addresses these issues by enabling organizations to process and analyze data at the edge, right next to robotics, production lines, and equipment — allowing OT devices to export telemetry data. This data can then be imported into ServiceNow's systems, unlocking capabilities that were previously unavailable.

Processing data at the edge, within OT environments, establishes strong connections between OT devices, management systems, and enterprise IT applications and enables near-instant data collection. It creates new opportunities for predictive maintenance and advanced operational AI. Plant managers and engineers gain real-time insights, allowing them to identify operational opportunities without invasive inspections or costly upgrades. Additionally, the approach supports secure device management, automates key workflows, and streamlines the deployment of new applications, improving collaboration across teams and maximizing infrastructure investments.

THE WIND RIVER AND SERVICENOW MODEL

The combined technologies of Wind River and ServiceNow allow organizations to deploy automated blueprints for provisioning Cloud Platform sub-clouds — small, medium, and large. Critical OT functions, including ServiceNow's MID Server and OT vendor tools, operate directly at the edge.

This represents a significant shift in how OT assets are managed and workflows are coordinated. Wind River Conductor's blueprints quickly set up cloud environments across both IT and OT domains, while Cloud Platform oversees operational functions at each site. Lifecycle automation provides comprehensive management of ServiceNow workloads and underlying platforms, supporting rapid asset discovery, intelligent orchestration, and event-driven operations. In this integrated model, MID Server communication is centralized, enabling workflows such as discovery, service mapping, event management, cloud cost control, and operational intelligence.

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Wind River Analytics is seamlessly integrated into both Cloud Platform and eLxr Pro, serving as the core operational intelligence in modern industrial settings. The platform efficiently collects a wide variety of sensor, control, and process data from edge devices and OT systems, then reliably transmits this information to a destination of the customer's choosing. Its lifecycle management features help ensure data integrity and asset health by actively monitoring changes and updates in real time.

TURNING OT DATA INTO ACTIONABLE INTELLIGENCE

Industrial producers face significant challenges in their OT devices, such as unexpected downtime, limited visibility, compliance issues, and configuration drift. These challenges are worsened by aging assets and oversized infrastructure needs. Downtime and other operational issues can quickly lead to multimillion-dollar losses, highlighting the urgent need for effective convergence solutions.

Cloud Platform and eLxrPro, integrated with ServiceNow, directly tackle these challenges. The integrated analytics of OT data enables organizations to quickly identify and resolve failures, thereby maximizing uptime and stability. Automated asset and event management provides business units with strong operational control, reducing reliance on resource-intensive virtual machine deployments. Automated lifecycle management speeds up deployment, simplifies security and compliance processes, and allows easy scaling to meet changing demands.

The impact of these technologies is further strengthened through strategic partnerships with major global systems integrators, delivering platforms that provide unified asset management and orchestration across complex infrastructure landscapes.

WHERE INDUSTRIAL OPERATIONS GO NEXT

Wind River is leading the way in industrial modernization, offering organizations tools to protect, accelerate, and future-proof their OT environments. Integrating this technology with ServiceNow enhances the value of both, resulting in a powerful combination that provides operational intelligence and a resilient system. Together, the pairing immediately helps reduce complexity and ownership costs, setting the stage for the smart factories, energy producers, and aerospace leaders of tomorrow.

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