WNDRVR Studio

DEPLOY: DEVICE SOFTWARE

REDUCING TECHNICAL DEBT DURING EXPENSIVE TRANSITIONS

THE CHALLENGE

Under pressure from carriers who see evolving business opportunities with 5G, a telecommunications company must rethink its strategy for maintaining its existing base station solutions. The new 5G systems must coexist with current deployments based on 4G or older.

At the projected rate of 5G adoption, keeping the 4G equipment's Linux-based OS up to date will require dedicated skilled staff for decades.

In the past, each project's team developed its own flavor of roll-your-own Linux, largely based on embedded build systems such as Open Embedded and Yocto Project. These systems were customized with board support packages (BSPs) for high-availability (HA) hardware platforms with hot-swap capabilities and the addition of proprietary communication protocols such as 5G web-based APIs.

All these legacy systems still operational in the field require updates to keep them secure, and valuable resources are wasted maintaining them. The new base station units will follow O-RAN architecture with a split between radio unit (RU), distributed unit (DU), radio access point (RAP), and centralized unit (CU) in all interfaces between these elements.

THE SOLUTION

Leveraging Wind River® Studio, the company can integrate the built-in Wind River CI/CD pipelines with its existing DevOps environment to maintain the existing 4G deployments while developing the new 5G technology. Studio's embedded Linux runtime, powered by Yocto Project Linux, includes packages, recipes, and layers specific to telco use cases for the highest levels of availability, serviceability, performance, and scalability.

The teams can overcome the challenges of staying current and addressing defects or vulnerabilities with predictable maintenance updates, for 10 years or more.

THE RESULTS

By better managing technical debt, this solution allows better allocation of talent and resources to focus on new 5G deployments that are reshaping network deployments overall, with a digital, agile, and modular suite of tools. The new technologies enable significantly higher margin, while the company will save on the cost of maintaining the legacy system.
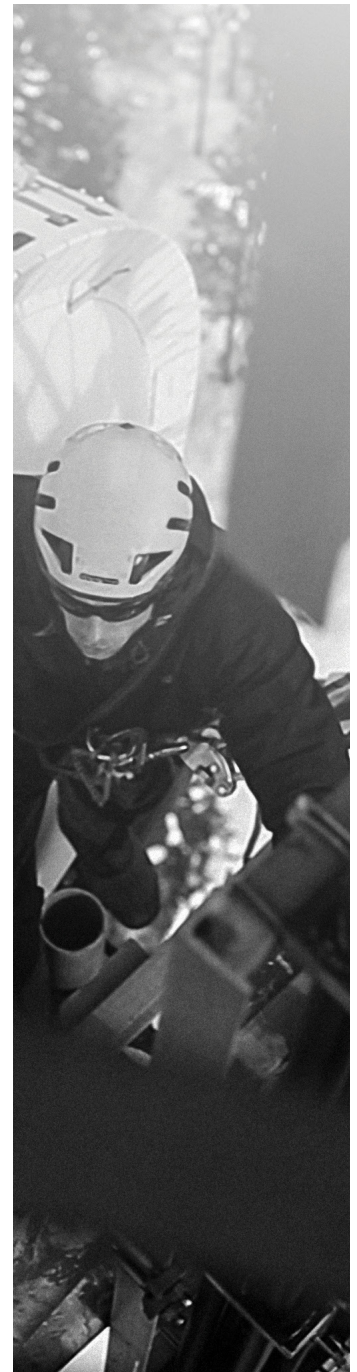
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