



Rakuten Symphony Validates Rocky Linux as High-Performance, Cost-Efficient OS on Rakuten Mobile Network in Japan

Rakuten Symphony is a Rakuten Group company, providing global B2B services for the mobile telco industry and enabling next-generation, cloud-based, international mobile services.

Rakuten Symphony is reimagining telecom, changing supply chain norms, and disrupting outmoded thinking that threatens the industry's pursuit of rapid innovation and growth. Based on proven, modern infrastructure practices, its open interface platforms make it possible to launch and operate advanced mobile services in a fraction of the time and cost of conventional approaches, with no compromise to network quality or security.

Challenge

In modern telecom networks, Distributed Unit (DU) deployment results in a large number of locally deployed sites that require individual operating system licenses and support, which is not economically sustainable. In addition, the high-performance requirements demanded by the radio processing workloads for 5G and Open RAN cannot be met by generic operating system solutions. Rakuten Symphony needed a real-time, open source operating system for handling low-latency and performance-oriented workloads with an economic model that works at scale. Building a custom OS is technically challenging with multiple dependencies, so they required a partner with deep-domain expertise that could provide ongoing support and maintenance.

Open source communities encourage innovation through collaboration. Without them, many of the technologies we take for granted today would never have developed, or would be locked away behind patent law.

Deployment of Rocky Linux represents a return to true open-source principles powered by open communities.

Solution

Rakuten Symphony found their solution with Rocky Linux and CIQ. Rocky, like its predecessor [CentOS](#), is 100% RHEL compatible, so it's a perfect fit for 5G and Open RAN deployments. Rakuten Symphony's DU workloads require a fine-grained allocation of compute, network, and memory resources, which is accomplished through Rocky Linux's real-time, high-performance kernel. They have been able to implement the required enhanced platform awareness for radio software operation by applying advanced techniques and tools such as CPU pinning, SR-IOV, DPDK/PMD, link aggregation, and source-based routing.

With CIQ, the official founding support and services sponsor of Rocky Linux, as their partner, Rakuten Symphony secured the expertise needed for building and maintaining their custom OS. CIQ employs many of the leading Rocky Linux engineers, who offer over 500 years of combined experience in open source software design and development.

With no licensing fees, since Rocky Linux is a free and open source operating system, Rakuten Symphony achieves significant cost savings, and the focus on high performance also improves cost-efficiency when deployed at such scale. Moreover, CIQ's people-based support model is economically viable for large networks because costs don't rise linearly with the number of nodes deployed.

Rakuten Symphony has successfully validated Rocky Linux with their radio software in the Rakuten Mobile network in Japan, and Rocky Linux is now available as part of Rakuten Symphony deliverables to its customers. In addition, Rocky Linux is foundational in the planned deployment of 30,000 units of Symware™ in Rakuten Mobile and contributes to the projected **50% cost savings**.

We've successfully validated Rocky Linux with our radio software in the Rakuten Mobile network in Japan.

The open source performance is clearly at parity with commercial alternatives available in the market today."

Partha Seetala, President • Cloud Business Unit, Rakuten Symphony

Results

Rakuten Symphony recognizes that open source software and communities driving open development are critical for the success of the architectures 5G operators rely on, and Rocky Linux has filled that vacuum. Rakuten Symphony will establish a dedicated team within its cloud business unit focused on Rocky Linux distribution and is also working closely with a broad spectrum of third-party vendors and technology partners within the telecom industry to make Rocky Linux the standard operating system for running large networks.

CIQ continues to support Rakuten Symphony as they expand their network footprint, enabling them to realize dramatic cost savings while offering state-of-the-art telecom services.