Build a modern foundation for RAN

Radio access networks are essential for modern communications

In today's digital world, radio access networks (RANs) play a critical role in delivering innovative telecommunications services. As a result, many service providers are modernizing their networks to better take advantage of these growing digital business opportunities.

Transforming your networks with cloud-native and containerized technologies can help you optimize operations, improve scalability, and increase flexibility. Red Hat and Intel offer an integrated, validated foundation for cloud-native RANs to help you modernize faster and more easily.

Deploy a flexible, integrated foundation for RAN

Together, Red Hat and Intel deliver a complete hardware and software stack for deploying cloud-native network functions (CNFs) like RAN. This solution provides a consistent, optimized operating environment from core to edge, simplifying both deployment and ongoing operations. The microservices architecture and Kubernetes orchestration offer efficient, dynamic scalability to align with changing service demand.

Using the Intel FlexRAN 5G network reference architecture, each component of the technology stack is integrated, tested, and optimized together to deliver a reliable, high-performance foundation for CNFs.

▸ Intel® Xeon® Scalable processors provide high-performance compute power for hybrid cloud environments, are optimized across workloads, and take advantage of the Intel® Advanced Vector Extensions 512 (Intel AVX-512) instruction set.

▸ Intel Ethernet 800 series network adapters deliver high-throughput, low-latency networking for demanding cloud and enterprise workloads.

▸ Intel hardware accelerators, including Intel FPGA Programmable Acceleration Card (Intel FPGA PAC) N3000 and Intel vRAN Dedicated Accelerator ACC100, improve network throughput and latency and offload tasks from the main processor to boost overall performance.

▸ Red Hat® Enterprise Linux® provides a consistent, security-focused operating system that delivers high performance from core to edge and takes advantage of the capabilities of Intel hardware and accelerators.

▸ Red Hat OpenShift® supplies a telco-grade Kubernetes container platform with full-stack automated operations for hybrid cloud, multicloud, core, and edge environments.

▸ Open Network Edge Services Software (OpenNESS) offers a mobile edge computing (MEC) software toolkit for optimizing edge platform performance.

▸ Data Plane Development Kit (DPDK) provides libraries to accelerate packet processing workloads.

Between 2019 and 2025, global mobile data use will grow nearly

4x

to 28 GB per subscriber per month.[1]

By 2025, there will be

24.6 billion

Internet of Things connections.[1]

Red Hat and Intel offer a modern, integrated, validated RAN foundation to help you take advantage of digital business opportunities.

1 GSMA. "The Mobile Economy 2020," 2020.

Accelerate RAN deployment

Red Hat and Intel help you deploy cloud-native RANs quickly and efficiently. Save time and effort with a preintegrated and validated foundation that eliminates the need to research, integrate, and test the underlying hardware and software components. Configure and optimize your RAN according to best practices using the joint reference architecture. Protect your business with built-in security features that work across multiple layers of the solution.

Boost operational efficiency

The Red Hat and Intel solution allows you to operate more efficiently. Reduce complexity with a unified foundation for all CNFs, including RAN. Increase operational efficiency with built-in automation and Red Hat OpenShift operators. Operators can automate a variety of software management tasks—including upgrades, failovers, and backups—to boost reliability, security, and efficiency. Operators are available for Intel accelerators as well as many third-party CNFs.

Customize and adapt your environment

Red Hat and Intel give you the flexibility and adaptability you need for modern telecommunications operations. Customize your environment with certified products and technologies from a large partner ecosystem. Choose the CNFs that best meet your organization's needs at any point in time.

Optimize your performance

The Red Hat and Intel solution delivers high performance to support modern networks. Choose the underlying hardware platforms that fit your performance requirements. Maximize throughput and minimize latency with network hardware acceleration in a small, efficient form factor. Improve compute performance with RAN-specific hardware acceleration that offloads layer 1 forward error correction (FEC) algorithms from the main processor.

Learn more

Modernize your network faster and more easily with a validated foundation from Red Hat and Intel.

Learn more at redhat.com/intel and intel.com/redhat.

About Red Hat

Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers integrate new and existing IT applications, develop cloud-native applications, standardize on our industry-leading operating system, and automate, secure, and manage complex environments. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500. As a strategic partner to cloud providers, system integrators, application vendors, customers, and open source communities, Red Hat can help organizations prepare for the digital future.

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