

Increase flexibility and savings

The value of evolving your radio access network architecture

“The market will see a **60%** compound annual growth rate (CAGR) in vRAN, and **124%** in the O-RAN subset of that sector, between 2020 and 2026.”¹

To accelerate time to market for compelling services, mobile operators see transformation of their radio access networks (RANs) as a path to the flexibility and agility required.

This transformation relies on an open, hybrid, and cloud-native platform that will allow service providers to fully unlock the potential for innovation and deliver faster.

Lower costs and improve operational efficiencies

Moving the RAN to a cloud-native environment with open interfaces, underpinned by a horizontal cloud platform that spans the entire service provider network, will open up new opportunities for service innovation and cost reduction.

An evolved RAN will allow service providers to use the latest innovations from a broad ecosystem of hardware and software vendors, taking advantage of commercial off-the-shelf hardware and multi-vendor interoperability.

Additional benefits will also include:

- ▶ Improved performance from next-generation hardware and software platforms with the ability to scale out on demand automatically.
- ▶ Added deployment flexibility with the disaggregation of software from the underlying hardware.
- ▶ Reduced capital and operational expenditure.
- ▶ Simplified and automated infrastructure for a consistent approach to transform RAN architectures.

Become more agile with a container-based architecture

Virtualization allows more readily for the disaggregation of RAN base station functions, creating the opportunity for RAN architecture changes. Designs can centralize certain functions and provide more efficient operations.

A new distributed (or disaggregated) architectural model for the RAN was defined in the 3rd Generation Partnership Project (3GPP) release 15. The 5G base station (or gNB) is split into three distinct entities: radio units (RUs on antenna sites), distributed units (DU), and centralized units (CU). O-RAN Alliance has enhanced the interface definitions among these to support multivendor interoperability.

Kubernetes-based cloud-native solutions offer enhanced functionality and more simplified implementation. These characteristics will further lower costs and increase efficiency for RAN deployments.

A vRAN and open RAN deployed using a container-based, microservices environment will help optimize a service provider's 5G infrastructure.

Virtualization results in the disaggregation of the RAN into two dimensions:

- Separation of hardware and software.
- A functional split of the base station.

¹ *“Is it too risky to migrate to vRAN and Open RAN simultaneously?” Rethink Wireless Watch. 12 October 2021.*

Evolve your RAN architecture with Red Hat OpenShift Container Platform

Red Hat® OpenShift® offers a security-focused, scalable, and flexible way to evolve your RAN architecture. Build a telecommunications service provider (telco) cloud across your network and take advantage of its predictable latency, high performance, and support for timing and synchronization features critical for vRAN and open RAN deployments.

Software functions can be disaggregated, placed in optimal locations, and made more manageable with a consistent cloud platform.

Red Hat OpenShift helps service providers deliver new services faster, through zero-touch deployment and operations. Integration of a GitOps framework optimizes operational models with orchestration and automation capabilities and helps simplify workflows and reduce overall total cost of ownership (TCO).

Red Hat's extensive partner ecosystem ensures freedom of choice for service providers to select software and hardware from trusted vendors to fit their needs. Together we bring pre-integrated and pretested RAN network functions within a simplified subscription-based model.




Red Hat offers an enhanced service level agreement (SLA) and consulting services for ongoing integration and optimization to help maximize a service provider's success in delivering 5G services.

[Learn more about how taking an open source approach can help service providers respond to the demands of their customers more effectively.](#)



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