**Red Hat**

# 4 advantages of container-based architecture for RAN deployments

A container-based platform can open up new opportunities for service innovation and reduce costs with greater agility and faster time to value. Here are four reasons why selecting Red Hat® OpenShift® is beneficial for transforming your radio access network (RAN) environment.

## 1 Simplify at scale with with zero-touch infrastructure provisioning

**To deliver new services faster, service providers should consider optimizing operational models with orchestration and automation capabilities to simplify workflows and streamline deployment and operations.**

Considering an automated approach to managing the increasing size, complexity, and dispersed nature of the RAN will increase efficiency and lower costs. Using automation tools and methodologies, such as GitOps, will allow the entire RAN infrastructure to be defined declaratively as code, which streamlines deployment and ongoing operations.

Automation tools and methodologies can help teams:

▸ Gain full traceability and visibility across the platform, with a history of all changes.

▸ Apply any provisioning and deployment change to RAN infrastructure and applications at scale.

▸ Install, upgrade, and maintain cloud infrastructure for RAN workloads with zero-touch provisioning.

## 2 Increase efficiency and lower costs

**Consider a horizontal, cloud-native, and container-based platform for your virtualized RAN and open RAN deployments.**

Red Hat OpenShift Container Platform ensures the necessary features and capabilities for the RAN's deterministic performance requirements.

▸ Deliver RAN workloads with stringent low-latency deterministic requirements with core kernel features such as interrupt handling and process scheduling in the microsecond range.

▸ Use precision time protocol (PTP) to deliver timing across packet-switched networks.

▸ Use hardware acceleration components to deliver the expected performance from the RAN.

▸ Align platform resources, such as central processing units (CPU), memory, and I/O devices, on the same non-uniform memory access (NUMA) node to eliminate processing delays.

▸ Build an effective cloud-native platform based on containers on bare-metal servers to deploy open RAN.

## 3 Deploy a consistent cloud-native platform

**The ability to deploy from core to edge, and in different form factors, from one node to thousands, is an important capability of your underlying cloud-native architecture.**

Red Hat OpenShift Container Platform and Red Hat Advanced Cluster Management for Kubernetes offer unified governance and life cycle management capabilities for greater automation and orchestration:

▶ A secure, simple, scalable, and flexible way to evolve your RAN architecture.

▶ Accelerated development, delivery, and life cycle management of your evolved RAN across multiple cloud environments.

▶ A common platform that supports high-performance networking and compute features that deliver high-demanding RAN workloads.

**Learn more**

Red Hat is proud to work with partners to provide telecommunication solutions.

## 4 Why Red Hat?

**Red Hat connects service providers with open source technologies through a collaborative approach and ecosystem.**

We have fostered a strong collaboration with a wide range of partners that are focused on innovation for the RAN. We continuously validate partner network functions to ensure they work reliably with our products, giving service providers a wide variety of choices.

Our ecosystem at a glance:

▶ Red Hat has invested approximately US$25 million in engineering resources, with over 250 engineers dedicated to solutions for RAN.

▶ We have partner-developed blueprints and reference architectures to help service providers quickly deploy pre-integrated RAN components from different vendors.

▶ We facilitate the development, testing, and deployment of partner network functions (virtual network function and cloud-native network function) for accelerated adoption and mitigated risk.

▶ Red Hat can maximize a service provider's success in launching 5G services with a subscription-based commercial model that includes an enhanced service level agreement (SLA) and Red Hat consulting services for integration, operation, and optimization.

**About Red Hat**

Red Hat helps customers standardize across environments, develop cloud-native applications, and integrate, automate, secure, and manage complex environments with award-winning support, training, and consulting services.

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