

Automate and accelerate your migration to open vRAN

Eliminate vendor lock-in, reduce risk, and speed your time to market

Red Hat, Dell, Altiostar, NEC, and NetCracker bring together our expertise and solutions to deliver a best-in-class reference architecture (RA) that provides telcos with a viable option as you modernize. Our offerings are integrated into one cohesive solution that reduces incompatibility risk and helps you transform your radio access network much faster.

Deploy a cell tower in less than an hour vs. several days or weeks

5G offers tremendous promise for communication service providers (CSPs) in terms of new services and revenues. Still, there is a lot of pressure to accommodate the growing demand and new 5G requirements. Traditional, proprietary radio access networks (RANs) are typically inflexible and restrictive, which is why many CSPs are looking to bypass the challenges that come with conventional radio hardware and network architectures.

Key benefits

Feature	Benefit
Vendor flexibility	No vendor lock-in
Integrated	Fully integrated solution with best-in-class technology
Zero-touch provisioning	From bare metal all the way up, with powerful automation capabilities
Scalable	Agility and scalability at every layer of the stack
Faster time-to-market	Open virtualized RAN lets you deploy a cell tower in less than an hour vs. several weeks or days
Efficacy	Efficient deployment and day-two operations
Simplicity	Reduced complexity and risk with a prevalidated design—no need to start from scratch
Total cost of operations	Investment protection—recompose, repurpose, and rebuild other network services when needed, using the same Dell EMC PowerEdge servers

Open virtualized RAN (open vRAN) provides a viable and proven path forward. It has the potential to meet carrier-grade latency requirements while also delivering greater flexibility and speed. Red Hat and four valued partners have come together to build a prevalidated and ready-to-use reference architecture for open vRAN deployments.

Fast-track your network migration with a blueprint for success

Together, we've built a reference architecture that is pretested and validated, letting you accelerate deployment. The hardware, cloud software, open vRAN software, and orchestration elements are integrated successfully and are compatible with and optimized for best-performing open vRAN.



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This RA integrates technology components and solutions beginning at the bottom of the stack and working all the way up. It starts with solutions from Dell Technologies. Dell EMC PowerEdge 740xd servers deliver powerful compute resources and support for accelerator technologies. Using the Intel FPGA Programmable Acceleration Card (Intel PAC) N3000, radio processing is offloaded to the FPGA, which frees up valuable CPU resources to achieve a highly efficient and flexible platform for the open vRAN distributed unit (DU) use case.

Standardizing on Dell EMC PowerEdge Intel Xeon platforms helps CSPs with burdensome life-cycle management. You can streamline the equipment maintenance catalog, push out updates quickly and consistently, and speed up maintenance cycles.

Next, a more secure cloud foundation is layered on top to manage Dell EMC hardware resources more efficiently while also simplifying open vRAN deployment and operations. The Red Hat® telco cloud is built on the open source foundation of Red Hat Enterprise Linux®, Red Hat OpenStack® Platform, and Red Hat Ansible® Automation Platform. You can deliver deterministic, low latency capabilities with a real-time kernel and create tighter access control with Security Enhanced Linux (SELinux).

Red Hat OpenStack Platform offers a reliable cloud platform that virtualizes and manages applications on the PowerEdge 740xd. Red Hat Ansible Automation Platform offers scalable automation that streamlines deployment of Dell EMC hardware—BIOS and configurations—and delivery of software-based RAN functions. Red Hat brings a complete library of automation playbooks to fast-track hardware configuration and deployment. And by managing updates and patches, Red Hat technology ensures the Dell EMC hardware systems and software are always up to date and more secure.

On top of this cloud foundation is the open vRAN software layer from Altiostar that also integrates with this large partner ecosystem. It separates the various components of a traditional RAN—radio unit (RU), distributed unit (DU) and centralized unit (CU)—while also virtualizing the radio access baseband functions to build a disaggregated multivendor, webscale, cloud-based mobile network. This is what opens up the network and allows us to combine and deploy these disaggregated components for a superior solution.

Altiostar Open vRAN software increases automation capabilities, facilitating faster time-to-market for CSPs. Altiostar's open vRAN automation lets you deploy remotely, through the cloud, in a matter of minutes.

As you move away from a single, integrated appliance solution to a disaggregated model, the challenge of any open vRAN ecosystem is integrating and operating the various components so they work together as a complete, unified system.

A critical piece of this RA is the systems integration and end-to-end orchestration for operations automation. NEC and NetCracker not only manage the functional computing resources but also operate the physical and virtual resources, including the radio access network. This requires a systems integrator with expertise in IT and networks as well as physical and virtual domains.

NEC and NetCracker have the requisite expertise in both to orchestrate the entire system. They are already working with several global services providers to deploy open vRAN using this joint reference architecture.

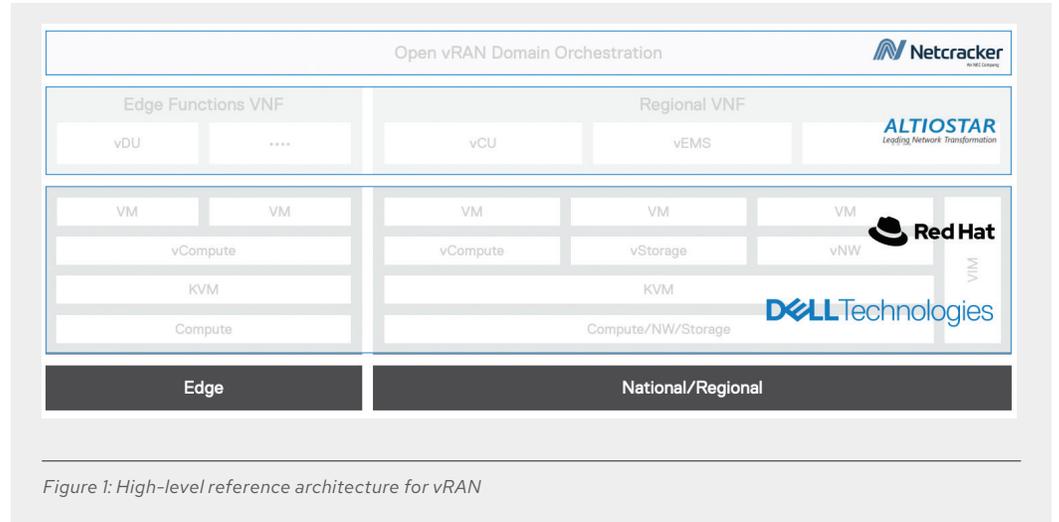


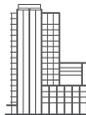
Figure 1: High-level reference architecture for vRAN

Get started today

As you navigate the transition to 5G and other demands on your network, technology is continually evolving. While change is out of your control, you can control how you set up your network. Migrating to open vRAN will give you the automation and time savings you need. Red Hat, Dell Technologies, AltioStar, NEC, and NetCracker bring our collective expertise to your radio access network with a pretested, validated reference architecture.

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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