

Automate and Accelerate Your Migration to Open vRAN

Get started now with a validated reference architecture that eliminates vendor lock-in, reduces risk and speeds your time to market.

Accelerate cell tower configuration with remote, automated software deployment.

This is an exciting period. 5G is here, and it offers tremendous promise for communication service providers (CSPs) in terms of new services and revenues. Still, there's a lot of pressure to accommodate the growing demand and new 5G requirements. Also, your radio access network (RAN) must be able to support these new requirements. But traditional proprietary 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.

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. And the good news for CSPs is that Dell Technologies and four of our valued partners have come together to build a pre-validated and ready-to-use reference architecture (RA) for open vRAN deployments.

Working closely with Red Hat®, Altiostar®, NEC® and NetCracker®, we bring together our respective expertise and solutions to deliver a best-in-class RA that provides telcos with another viable option as you modernize. We integrate our respective offerings for you and help you put them all together into one cohesive solution that reduces risk in terms of incompatibility and helps you transform your radio access network much faster.

Fast-track your network migration with a blueprint for success.

Together, we've built a reference architecture that is pre-tested and validated, enabling you to accelerate deployment. We've done the legwork for you to make sure the hardware, cloud software, open vRAN software and orchestration elements integrate successfully and are compatible and optimized for best-performing open vRAN.

This RA integrates best-in-class technology components and solutions beginning at the bottom of the stack and working all the way up. It starts with proven workhorses 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, we can offload radio processing 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 rein in burdensome lifecycle management. You can streamline the equipment maintenance catalog, push out updates quickly and consistently, and speed up maintenance cycles. And, as we continue to roll out our edge portfolio and grow our investments in telecommunications, Dell Technologies delivers new servers designed specifically for edge deployments and rugged telco environments.

Next, we layer a secure cloud foundation 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 real-time kernel and enable tighter access control with Security Enhanced Linux (SELinux).

Red Hat OpenStack offers a reliable cloud platform that virtualizes and manages applications on the PowerEdge 740xd. The 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 secure.

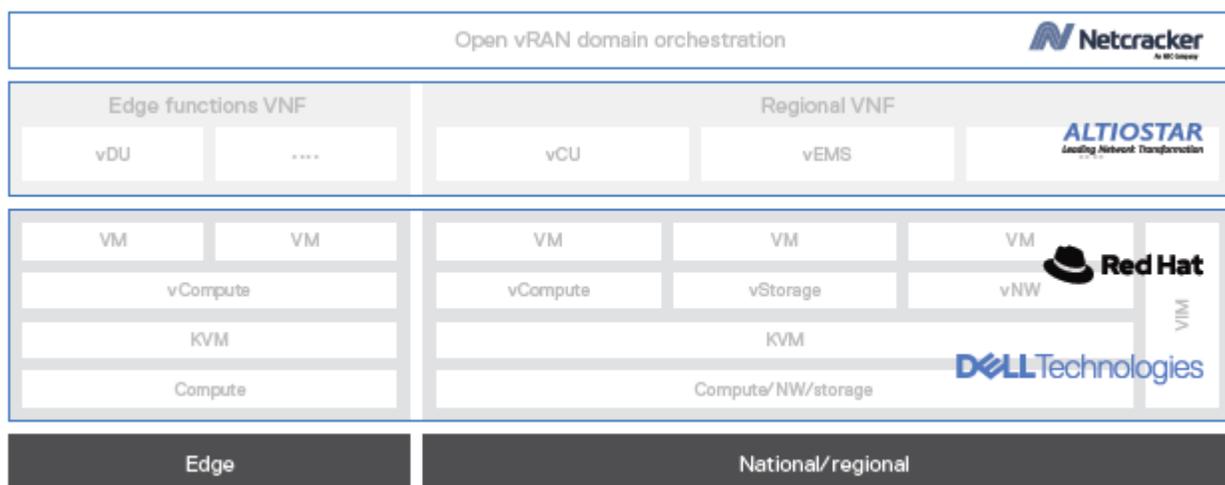
On top of this cloud foundation is the open vRAN software layer from Altiostar that also integrates with this large partner ecosystem. It separates the various components of a traditional RAN — radio unit (RU), distributed unit (DU) and centralized unit (CU) — while also virtualizing the radio access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

Altiostar open vRAN software increases automation capabilities, enabling much faster time to market for CSPs. In the past, traditional RAN required truck rolls to tens of thousands of cell sites across large geographic areas. Today, you no longer need to send someone out to the cell tower to deploy. Instead, Altiostar’s open vRAN automation lets you do it remotely, through the cloud, and in a short timeframe.

Of course, as you move away from a single, integrated appliance solution to a disaggregated model, the real 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, enabling operations automation. NEC and NetCracker not only manage the functional computing resources, but also operate the end-to-end 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 end-to-end system. They are already working with several global services providers to deploy open vRAN using this joint reference architecture.



Key benefits

- No vendor lock-in
- Fully integrated solution with best-in-class technology
- Zero-touch provisioning from bare-metal all the way up through the stack
- Agility and scalability at every layer of the stack
- Faster time to market
- Efficient deployment and day-two operations
- Reduced complexity and risk with a pre-validated design — no need to start from scratch
- Investment protection — recompose, repurpose and rebuild other network services when needed, using the same Dell EMC PowerEdge servers

Get started today

CSPs well know, as you navigate the transition to 5G and other demands on your network, that technology is continually evolving. Change is out of your control. But you can control how you set up your network. Your traditional, proprietary RAN is slowing you down and not giving you the flexibility you want.

You can change that. Migrating to open vRAN is where you're going to get the automation and time savings you're after. And the best part is that you're not alone. Dell Technologies, Red Hat, Altiostar, NEC and NetCracker are here to help. We bring our collective expertise to your radio access network — with a pre-tested, validated reference architecture that puts operators squarely in the driver's seat.

Learn more

For more information, contact your Dell Technologies sales representative or review our [reference architecture](#).

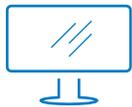
Our solution partners

ALTIOSTAR
Leading Network Transformation



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