

# Dell Technologies-Red Hat® OpenShift® Reference Architecture for Telecom

A proven, best-of-breed model for cloud-native communications networks

## Summary

Telecommunications operators now have a proven, accelerated path to a robust, cloud-native architecture with the Dell Technologies-Red Hat OpenShift Reference Architecture for Telecom. Based on the Red Hat OpenShift Container Platform and Dell Technologies' portfolio of telco-grade infrastructure, this cloud-native network architecture provides telecom operators with a powerful path to building a consistent cloud-native network from the core to the far-edge of their network.

## Solution Highlights

Dell Technologies and Red Hat deliver a cloud-native foundation of the future, built specifically for telecommunications operators that includes:

- A software-based cloud platform
- Industry standard, telco-grade servers designed for core, edge, and RAN environments
- Automated hardware configuration and remote management
- Open Networking
- A broad choice of data services options for persistent storage
- Data Protection that enables fast and consistent recovery from data loss, data corruption, disaster or cyber attack

## Digital transformation starts with Dell Technologies

The benefits of a cloud-native networks are well documented: lower costs, enhanced operational efficiencies, openness to innovation, faster service creation, more opportunities for automation, and the list goes on. Telecommunications service providers recognize the value of a cloud-native architecture in delivering 5G network experiences and deploying new revenue-generating services. Where communications service providers need help now is in identifying, designing, and building that architecture to support their 5G digital transformation. Dell Technologies, together with Red Hat, is pleased to offer CSPs a proven, advanced, and highly resilient cloud-native platform for 5G networks featuring Dell's telco-grade infrastructure solutions and Red Hat's OpenShift Container Platform.

Dell Technologies and Red Hat have created and validated a reference architecture for telecom that addresses everything needed to deploy a cloud native network including:

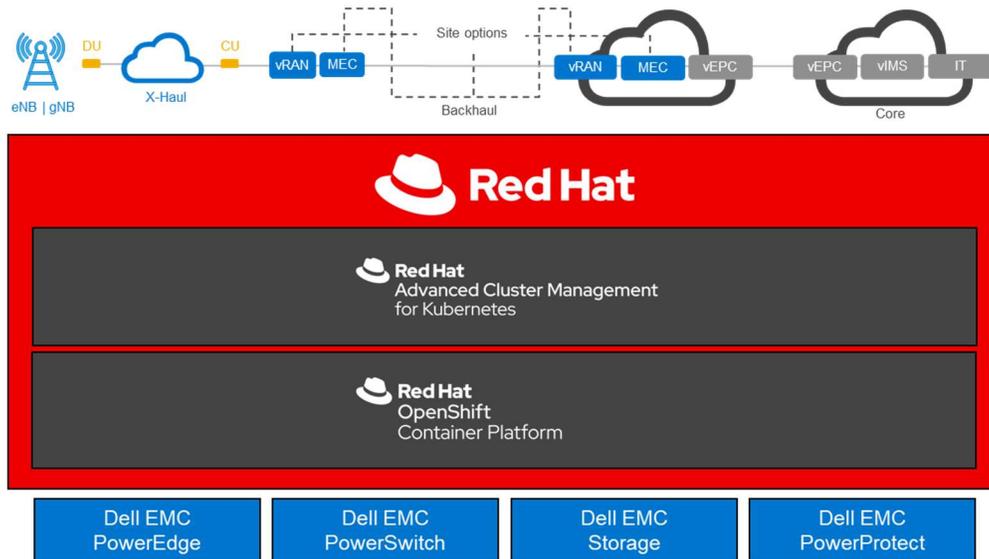
- Telco-grade resiliency
- A broad portfolio of telco-optimized hardware and software
- From a secure, trusted, world class supplier that is ready to meet your demands at any scale

## A cloud-native architecture built for telecom and 5G

Dell Technologies infrastructure and Red Hat OpenShift Container Platform software provide a flexible, scalable, best-of-breed foundation for telco-grade, cloud-native networks. Our jointly developed reference architecture allows CSPs to accelerate the move to a cloud-native platform—one that delivers optimal performance and security, embraces open standards to eliminate vendor lock-in, reduces costs, simplifies network management, and takes advantage of new innovations such as automation and artificial intelligence (AI).

The Dell-Red Hat OpenShift Reference Architecture for Telecom is designed specifically for CSPs to enable the rapid deployment and efficient management of cloud-native network functions and workloads. It includes detailed build guides and bill of materials that address the most critical aspects of a cloud-native architecture including:

- Telco-grade, industry-standard servers built specifically to deliver high performance for core, edge, and RAN environments
- Automated hardware configuration and remote hardware management to streamline operations
- Additional layers of built-in security
- Powerful analytics to maintain and improve network performance
- Advanced, container-based storage service
- Data protection to recover from data loss, data corruption, disaster or cyber attack



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### A broad portfolio of telco-optimized products

Dell Technologies offers telecommunications operators a broad portfolio of products that have been designed specifically for the core, edge, and RAN environments. These products have been engineered for exceptionally high-performance, rapid deployment, remote management, and harsh environments.

#### Dell PowerEdge Servers

The Dell EMC PowerEdge Series represent the leading edge of performance/price for telecommunications servers, available in a variety of customized configurations. These range from the high-performance PowerEdge servers for the core networks to the ruggedized and resilient, short depth, NEBS 3 compliant servers for the far edge and RAN. PowerEdge servers include options for extended support to facilitate long product life cycles.

#### Dell EMC integrated Dell Remote Access Controller (iDRAC)

The Dell EMC integrated Dell Remote Access Controller (iDRAC) allows telecom operators to remotely configure, manage, and automate their edge and core infrastructure from a single touch point, simplifying network infrastructure management and accelerating new hardware deployments.

## **Dell EMC PowerSwitch Open Networking**

Dell Technologies has one of the broadest open networking portfolios in the industry – spanning both hardware and software. Dell's unique approach involves combining its own developed technologies with those from a broad ecosystem of technology partners. Our Dell EMC PowerSwitch line offers both an industry hardened OS as well as support for open networking, providing freedom to run third-party operating systems (OS). Our Open Networking approach and solutions stimulate rapid innovation by helping CSPs achieve unprecedented levels of flexibility and efficiency. These solutions help minimize the time and effort required to design, provision, and manage networks.

## **Dell EMC Storage**

Dell Technologies access to advanced data services for structured and unstructured data through its CSI drivers for Dell EMC storage arrays that include Unity XT, PowerStore, PowerMax and PowerScale. Offered in range of all-flash and hybrid models, Dell EMC storage arrays deliver high performance and cost-effective options for block, file and object storage at any scale from the far edge of the network to the core data center. Rich data services include guaranteed data reduction rates, synchronous and asynchronous replication, cloud tiering, storage tiering, thin provisioning, data at rest encryption, web-based management, integrated iDRAC based monitoring and alerting and more. Dell also offers Ansible modules to automate common management and provisioning tasks. Support for Red Hat OpenShift Data Foundations delivers software defined storage for containers on Dell EMC PowerEdge servers that can be deployed, consumed, and managed through the Red Hat OpenShift administrator console.

## **Dell EMC PowerProtect**

As critical network functions and edge applications move onto the OpenShift platform, operators must protect these workloads from data corruption, data loss, disasters, and cyber attack. But, protecting an OpenShift environment is not as simple as applying a traditional backup and disaster recovery solution to its container space. As an innovative leader in protecting Kubernetes, Dell Technologies has evolved, innovated, and developed integrations with OpenShift that address the specific needs of the OpenShift platform. Dell Technologies protection for OpenShift includes the unique complexities that come with protecting the entire OpenShift environment to ensure high availability as well as consistent and reliable backup and restore of workloads running on the OpenShift platform.

## **A trusted leader in cloud infrastructure**

Dell Technologies is the world's leading provider of servers, clients, converged infrastructure, and cloud infrastructure. Each year, Dell ships over 49 million PCs and two million servers around the globe. We are leveraging our global presence and commitment to sustainable manufacturing to helping telecommunications operators build the 5G cloud networks of tomorrow.

Dell servers are synonymous with open systems and exceptional price/performance. In addition, Dell Technologies' secure global supply chain sets the industry standard for security and reliability. Telecommunications operators can trust Dell to deliver innovation that leads the industry and utilizes the latest processors, security standards, storage components and cloud technology.

By building their cloud future on Dell Technologies and Red Hat OpenShift, telecommunications operators are choosing a proven, open, cloud-native architecture that is built specifically to telco-grade requirements. With our reference architecture, telecom operators are putting their cloud future on a fast path to success with trusted partners and industry-leading technology.

To learn more about the Dell Technologies' solutions for the telecommunications industry, visit us at <http://www.delltechnologies.com/telecom>.