

# Dell Technologies Reference Architecture for VMware Telco Cloud Platform

An open, best-of-breed cloud platform for 5G Communication Service Providers

## Summary

The Dell Technologies Reference Architecture for VMware Telco Cloud Platform provides a best-of-breed framework for a fully virtualized 5G cloud network featuring Dell EMC PowerEdge servers, Dell EMC PowerSwitch open networking, and VMware software. The reference architecture helps Communication Service Providers accelerate the deployment of a high-performance 5G cloud network from core to RAN.

## Solution Highlights

Dell Technologies Reference Architecture for VMware Telco Cloud Platform delivers a fully virtualized and validated 5G cloud-native network architecture that features:

- VMware virtualization software to manage and deploy virtualized network functions and containerized network functions in a 5G cloud environment
- An open, telco-grade server platform built for core, edge, and RAN environments
- High-density switches for networked communications
- Options for carrier grade support
- Automated infrastructure configuration and remote management
- Telco cloud consulting and implementation services from VMware & Dell Technologies

## Build a better 5G cloud with Dell Technologies and VMware

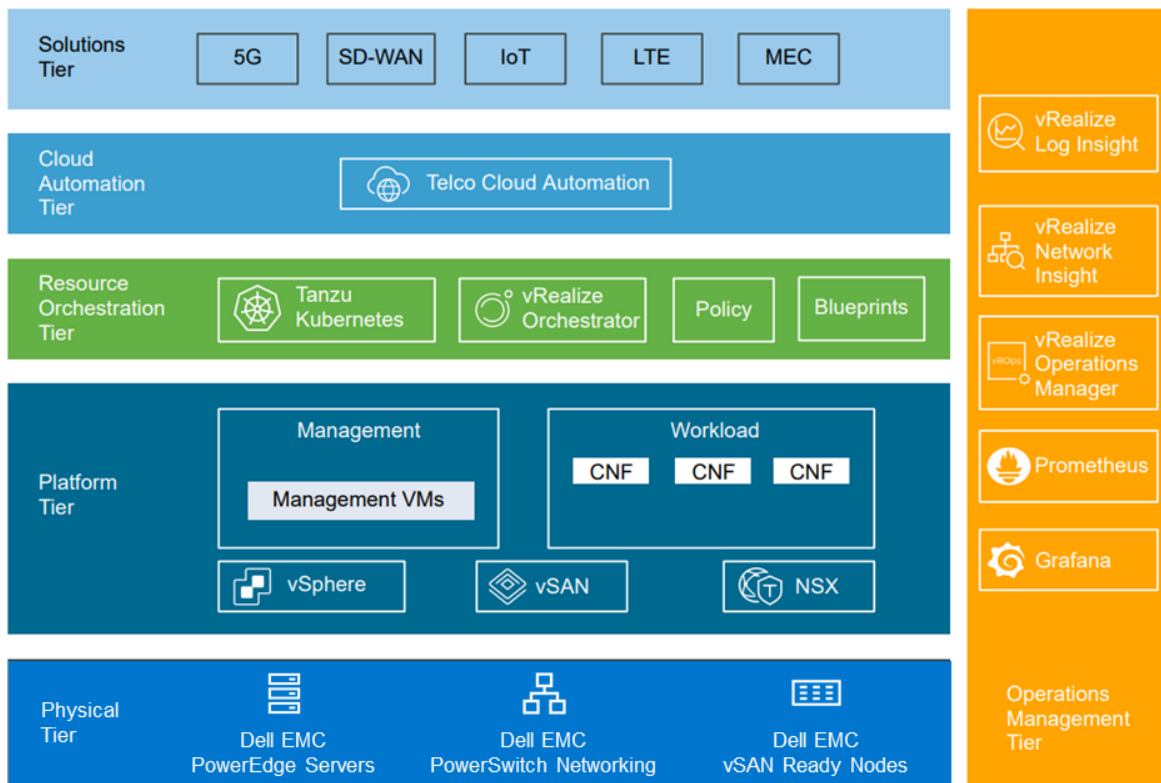
To effectively deliver 5G services, Communications Service Providers (CSPs) need a cloud-native network that is optimized for high performance, open to innovation, and designed for reliability and security. Dell Technologies is committed to helping CSPs build that network today with the Dell Technologies Reference Architecture for VMware Telco Cloud Platform. This reference architecture provides a proven, cloud-native, network architecture that delivers exceptional scale and high performance in a validated solution.

The reference architecture features a best-of-breed configuration of networking, compute, and storage solutions from Dell Technologies and VMware that addresses the requirements of a 5G network. It provides CSPs with a robust design for the deployment of virtual and container network functions that can be quickly instantiated and managed using familiar VMware tools and industry-leading Dell EMC hardware. With the Dell Technologies Reference Architecture for VMware Telco Cloud Platform, CSPs can deliver 5G services with a fully validated design that can serve as the foundation for building a telco cloud platform, including:

- A fully virtualized 5G cloud-scale network based on a proven, best-of-breed architecture
- A broad portfolio of networking, compute, and storage solutions from VMware and Dell Technologies
- A global services team backed by a trusted global supply chain

## A dynamic, programmable 5G telco architecture

The Dell Technologies Reference Architecture for VMware Telco Cloud Platform is designed to meet the requirements for a flexible, scalable, 5G telco architecture. Its multi-tier design allows CSPs to easily create, deploy, and manage 5G services through service automation/orchestration, network slicing, and more while deploying resources at the core and the edge of the network as needed.



*Dell Technologies Reference Architecture for VMware Telco Cloud Platform*

The *Solutions Tier* contains the network services that will be delivered through the network, such as multi-access edge computing (MEC) applications, IoT applications, and other 5G applications. The *Cloud Automation Tier* provides a centralized control and management layer for service automation and optimization. The physical and virtualized resources that support these services are managed and orchestrated in the *Resource Orchestration Tier* using tools such as Tanzu Kubernetes and vRealize Orchestrator.

The *Platform Tier* hosts the virtualization run-time environment including virtualized and cloud-native network functions and the virtualized infrastructure (compute, storage, and networking) through vSphere, vSAN, and NSX-T Data Center. The physical network infrastructure resides in the *Physical Tier*. Operational intelligence for the network such as monitoring and alerts are managed in the *Operations Management Tier*.

### **Telco-optimized hardware from Dell Technologies**

Dell Technologies offers a wide portfolio of servers and networking solutions that are designed specifically for 5G core, edge, and RAN environments. These solutions are engineered to deliver high-performance, simplified management, and exceptional reliability for CSPs.

#### **Dell EMC PowerEdge Servers**

The PowerEdge Series delivers industry-leading performance, security, and simplicity of management. Dell EMC PowerEdge servers are built specifically for telecom workloads including edge, core, and RAN applications. These servers feature exceptional performance, high availability and reliability, and ruggedized forms for harsh environments. As part of the Dell Technologies Reference Architecture for VMware Telco Cloud Platform, highly scalable PowerEdge servers have been selected for the core and RAN applications.

#### **Remote Server Management and Automation**

The integrated Dell Remote Access Controller (iDRAC) provides remote management of the telecom infrastructure including the core, edge, and RAN servers. iDRAC simplifies network management and accelerates infrastructure

deployment by allowing CSPs to remotely configure, manage, and automate network infrastructure from a single touch point.

### **Dell EMC PowerSwitch Networking Switches**

Dell EMC PowerSwitch networking switches support the high-density, high-capacity communications requirements of 5G cloud networks. Their open, flexible design allows CSPs to seamlessly move to a software-based network framework that features a best-of-breed ecosystem of open-source components. The PowerSwitch S Series and Z Series networking switches are featured in the Dell Technologies Reference Architecture for VMware Telco Cloud Platform.

### **Dell EMC vSAN Ready Nodes**

Dell EMC vSAN Ready Nodes are pre-configured, tested and certified to run VMware vSAN. Each Ready Node includes just the right amount of CPU, memory, network I/O controllers, HDDs and SSDs. Dell EMC vSAN Ready Nodes are built on Dell EMC PowerEdge servers and enable easy deployment to scale quickly as your needs grow.

### **A Trusted Leader in Cloud Infrastructure**

Dell Technologies is more than the global leader in servers. We are also the world's leading provider of converged and cloud infrastructure, with a global, secure supply chain that ships over 49 million PCs and two million servers every year. With Dell Technologies and VMware, CSPs now have a single, trusted source for hardware and software to build the 5G networks of the future.

The Dell Technologies Reference Architecture for VMware Telco Cloud Platform represents a fully validated solution for 5G cloud networks featuring best-of-breed networking, server, virtualization, and container technologies from Dell Technologies and VMware. Through carefully detailed guides and bills of material, CSPs have the resources and components they need to migrate quickly and safely to a best-in-class 5G cloud architecture.

The age of proprietary telecom architectures is ending. The new age of telecommunications will be built on open solutions featuring best-of-breed technology from IT leaders and cloud/5G innovators. Build your future with Dell Technologies and VMware and open your network to a new world of possibilities.

To learn more about Dell Technologies' cloud solutions for the telecommunications industry, visit us at [www.delltechnologies.com/telecom](http://www.delltechnologies.com/telecom)