Dell Technologies Reference Architecture for Red Hat® OpenStack® Platform

A proven, open, virtualization platform for the telecommunications industry

Summary

The Dell Technologies Reference Architecture for Red Hat OpenStack Platform provides a validated solution for deploying an open, virtual infrastructure based on the Red Hat OpenStack Platform on industry standard server, storage and networking technology from Dell Technologies.

Solution Highlights

- Freedom to pick and choose infrastructure components for your specific VNF or workload requirements.

- Detailed BOMs and build guides offer the peace of mind that comes from a validated architecture that simplifies deployment and minimize risk.

- Proven interoperability with solutions co-engineered and rigorously tested and validated for carrier grade performance.

- Investment protection with long life Intel® Xeon® processors and AMD EPYC™ processors

- Optimized configurations of hardware, Linux and OpenStack for NFV use cases.

- No vendor lock-in with open technologies that enable access to components from a wide variety of commercial third-party vendors.

- Carrier grade support for Dell EMC compute, networking and storage systems

- A portfolio of telecom optimized servers and open networking solutions from an industry leader that is ready to meet your needs at any scale

In response to 5G, Internet of Things (IoT) and emerging edge applications, communications service providers (CSPs) are moving away from vertically integrated platforms that are rigid and unforgiving, toward disaggregated solutions that bring greater flexibility and infrastructure agility.

While this shift ushers in new challenges in terms of deployment and management complexity, Dell Technologies and Red Hat® have joined forces to simplify and accelerate deployment and lifecycle management, helping CSPs transform on their terms — and with a high degree of confidence.

Designed for service providers

Together, Dell Technologies and Red Hat deliver a ready to use solution optimized for the telecommunications industry. The Dell Technologies Reference Architecture for Red Hat® OpenStack® Platform reduces customer time to value, easing the effort to procure, setup and deploy OpenStack solutions optimized for network function virtualization (NFV) workloads. They also provide CSPs the freedom to create an open platform for workloads from the core to the far edge the network.

The Dell Technologies Reference Architecture for Red Hat OpenStack Platform gives you freedom to select the solution components best suited for your virtual network function (VNF) or workload requirements. We offer a broad range of options — built on Dell EMC PowerEdge servers, Dell EMC PowerSwitch networking and Dell EMC storage — that are engineered and validated to support the Red Hat OpenStack Platform. This reference architecture provides optimized configurations for hardware design, infrastructure nodes, compute nodes, storage nodes, network design and software layout.

On the software side, Red Hat OpenStack Platform relies on Red Hat Enterprise Linux® for performance, security, hardware enablement, networking, storage and other primary services. The Red Hat OpenStack Platform delivers an OpenStack distribution with fault tolerance, scalability and core to edge expansion.

This solution utilizes OpenStack Ironic, also part of the Red Hat distribution, for bare metal configuration/provisioning and lifecycle management.
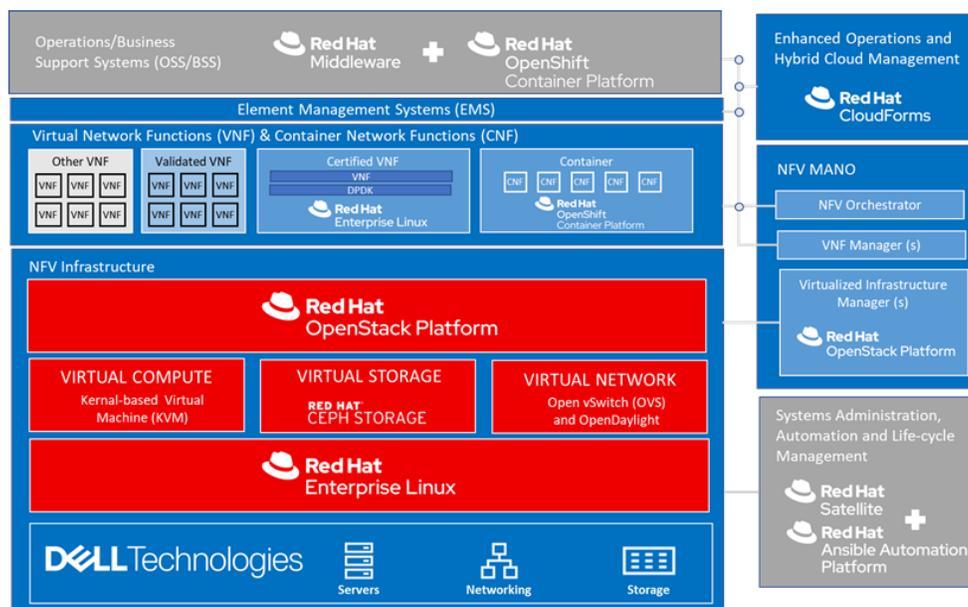
Dell Technologies Reference Architecture for Red Hat OpenStack Platform

A solid infrastructure foundation from Dell Technologies

Running the Red Hat OpenStack Platform on Dell Technologies infrastructure brings added flexibility and scalability, automation, and carrier-grade reliability and support to your network. Dell Technologies offers a broad 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 Dell EMC PowerEdge Servers deliver industry-leading performance, security, and simplicity of management. The Dell EMC PowerEdge line includes servers built specifically for telecom workloads including edge, core, and RAN applications that include options for extended service life to support long lifecycles in the field. The Dell EMC PowerEdge XR servers offer ruggedized, NEBS 3 compliant compute with workload acceleration and faster memory that is specifically designed to thrive in the space constrained, rugged, and harsh environments at the far edge.

Remote Server Management and Automation

The integrated Dell Remote Access Controller (iDRAC) provides remote management of the telecom infrastructure including servers in the core, edge, and RAN. iDRAC simplifies network management and accelerates infrastructure deployment by allowing CSPs to remotely configure, manage, and automate the deployment from a single touch point leveraging industry standard management interfaces like Redfish.

Dell EMC PowerSwitch Networking Switches

Dell EMC PowerSwitch open 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.

Why choose Dell Technologies and Red Hat?

We recognize that transformation is a huge undertaking for any organization, especially for service providers dealing with complex network requirements. That's why we're providing you with viable options that simplify the deployment

of VNFs — options based on open source standards and your choice of infrastructure components. More than that, though, we deliver peace of mind at a time when change can be unsettling. We do this through:

1. **Our longstanding partnership.** Dell Technologies and Red Hat have worked together for over the last 20 years to continually refine, improve, optimize and integrate a broad range of solutions based open standards, software and interfaces.

2. **World class and unified support.** With solutions that are jointly engineered and validated, you can turn to Dell Technologies or Red Hat — again, your choice — for consulting, deployment and design support.

3. **Customizable solutions.** While these Ready Architectures are prescriptive in nature, you can also customize solutions based on your unique VNF or workload requirements.

4. **Trusted and certified components.** Our solutions adhere to ETSI standards and governance initiatives shaping the NFVI ecosystem.

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

.

D∕ELL Technologies