

Soluzioni Dell EMC Open Networking per la semplificazione di ambienti Red Hat OpenStack

Fabio Bellini
Network Sales Engineer | Dell EMC

 DELL EMC



#redhatosd

Dell EMC Ready Bundle for Red Hat OpenStack Platform

Rapid, automated deployment of a reliable and
easy-to-manage OpenStack Cloud



RED HAT
OPEN SOURCE DAY
Europe, Middle East & Africa

DELL EMC



Did you know...

Dell EMC Ready Bundle for Red Hat OpenStack Platform

Jointly engineered

Deeply integrated

Fully validated



Fast, automated
deployment



Reliable
operations



Simplified
management



Independent
scalability



Range of cloud
services



Solution overview

Red Hat OpenStack Platform 10 Red Hat Ceph Storage 2

Compute and controller nodes

Dell EMC PowerEdge R series servers
Dell EMC PowerEdge FX2 modular servers

Software-defined storage nodes

Dell EMC PowerEdge R series servers
Dell EMC PowerEdge FX2 modular servers

Open networking

Dell EMC Networking switches

Scalable architecture

10 node starter bundle
Scale compute and storage independently,
from half rack to 3 racks

Services

Deployment, Integration, ProSupport, ProSupport Plus



REAL BUSINESS VALUE



Rapid automated
deployment



Operational
reliability



Streamlined
management



Cloud-native
PaaS/CaaS



Simple ordering
and support



A complete, co-engineered OpenStack solution



Core architecture



Validated
integrations
and
extensions



Red Hat CloudForms
Multi-cloud management



Red Hat OpenShift Container Platform
Cloud-native Platform-as-a-Service (PaaS)



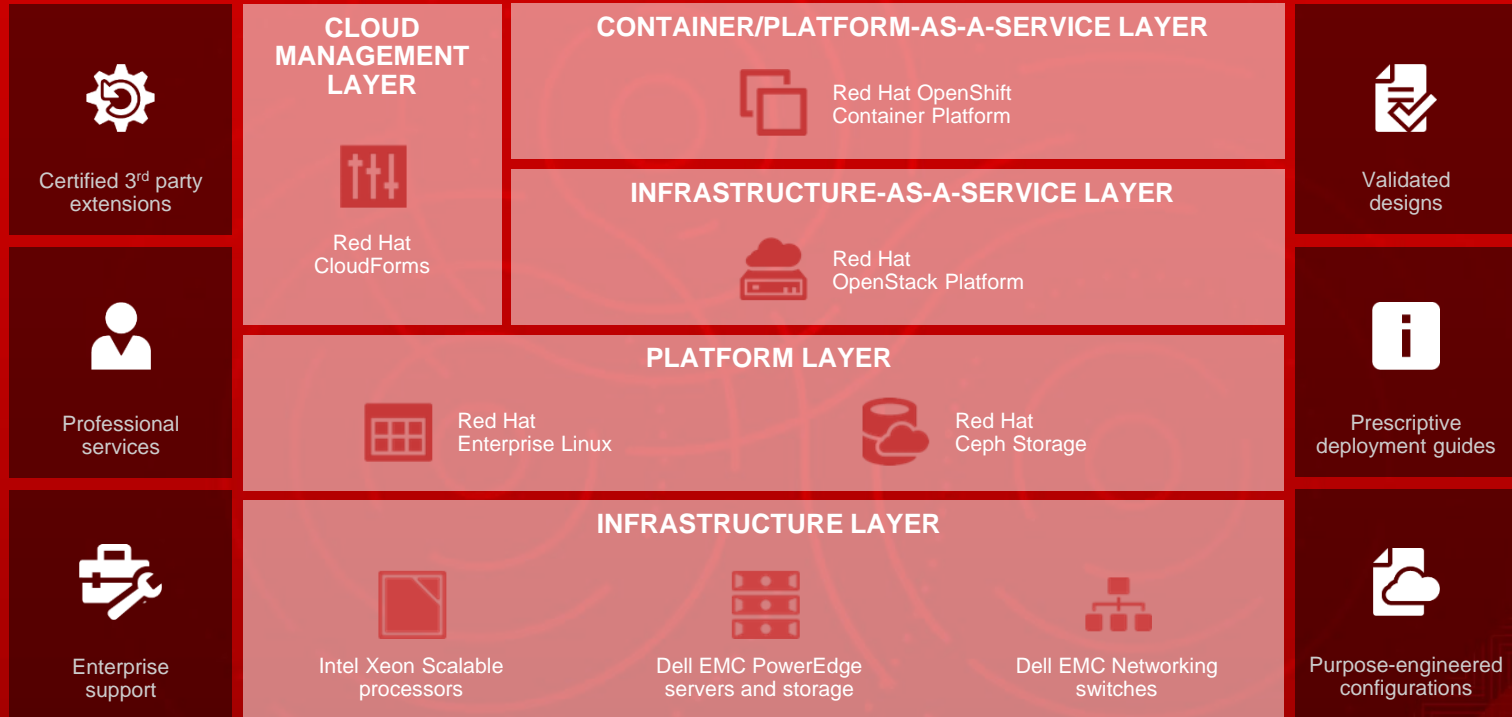
Red Hat OpenStack Platform
Agile Infrastructure-as-a-Service



Red Hat Ceph Storage
Scalable, cloud-native storage



Solution architecture



Dell EMC JetPack Automation Toolkit

Rapid, automated OpenStack deployment



<50%

deployment time for Dell EMC PowerEdge R series

1 hour

deployment time for Dell EMC PowerEdge FX series

Automates OpenStack cloud deployment and configuration

Works with Red Hat OpenStack Platform director and OpenStack Ironic

Use for both initial deployments and in-place upgrades



Use cases



Network functions virtualization

Virtualize communications network functions to reduce costs, increase resource utilization, and improve flexibility and agility.



Cloud hosting platform

Build a foundation for delivering cloud-based applications and services to internal and external customers to increase revenue and improve user experience.



Big data analytics

Gain insight into your business with a platform that helps you collect, store, organize, and analyze data from across your infrastructure.



Integrated IaaS and PaaS environments

Combine Infrastructure-as-a-Service (IaaS) and Platform-as-a-Service (PaaS) resources into a single environment for streamlined operations and management.





Dell EMC Networking

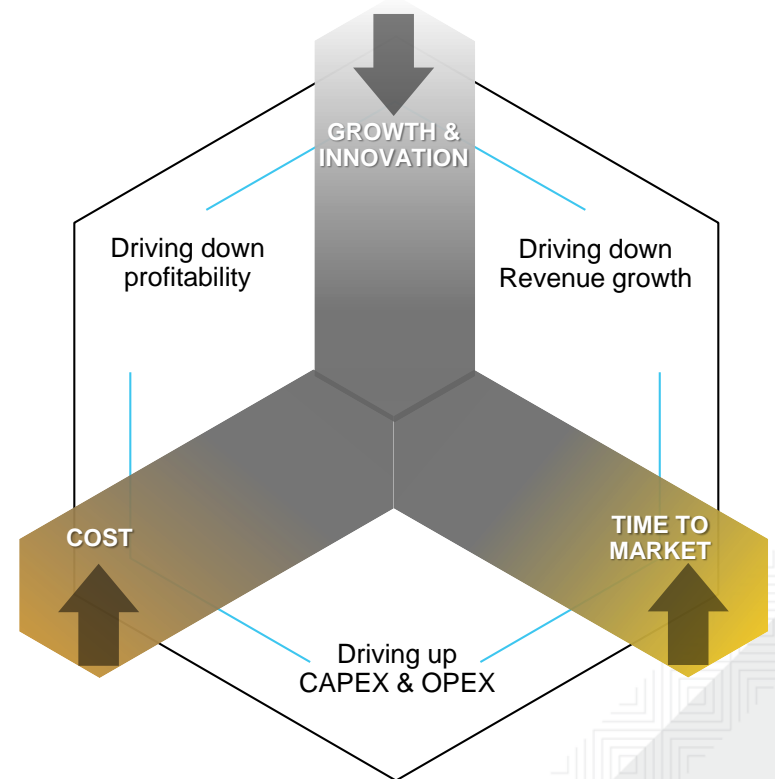


Business challenges for IT Customers

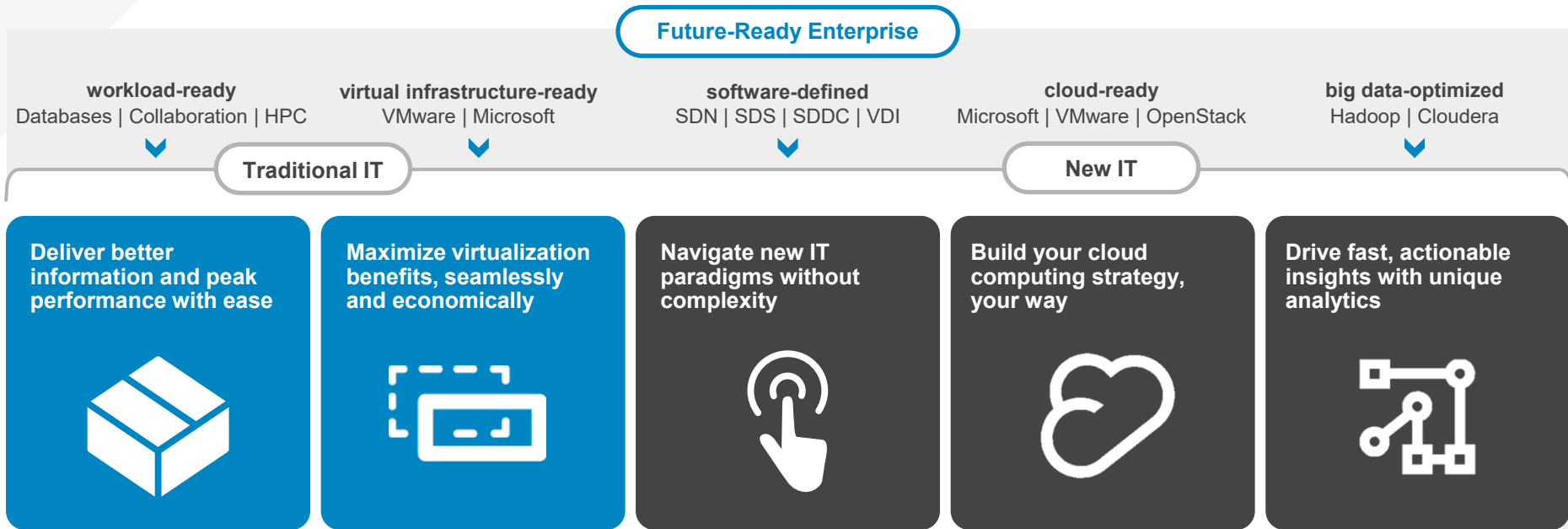
Growing CAPEX and OPEX for existing data centers

Long time to market for new or updated services

Slowing growth & innovation



Change Requires Future-ready solutions



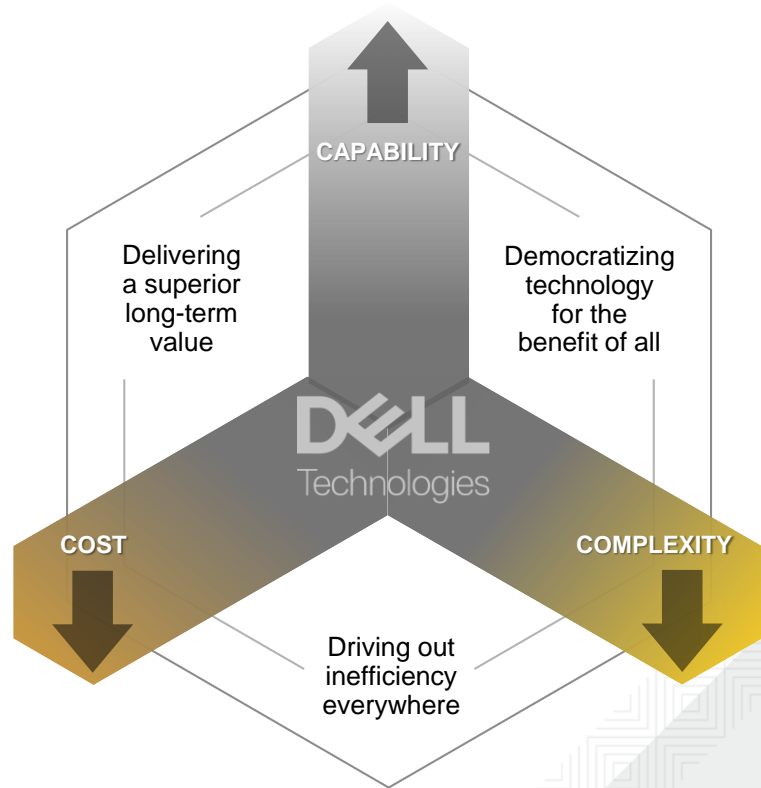
Dell Technologies is that partner



Creating a technology powerhouse by combining our industry-leading capabilities and global expertise

Solutions designed to work for your business

Delivering
cutting-edge
innovation to IT
Customers
globally



Our design philosophy



Open Architectures

Maximum choice, flexibility and investment protection, without forklift upgrades



Modern Portfolio

Modern systems and technologies no vested interest in legacy systems



Modular Systems

Open building blocks enabling mix-and-match interoperability up and down the stack



Scalable Solutions

Systems tailored to your workloads and designed to grow with your business

Recognition and Vision from Gartner

2015

2016

2017



“All organizations globally should consider Dell EMC, provided there is appropriate channel and sales coverage with networking skills in the region” – Extract from Gartner Magic Quadrant for Data Center Networking, July 2017

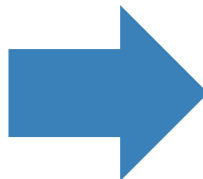
In 2014, Dell kicked open the doors of networking

Legacy Networking

Proprietary Networking
Software

+

Proprietary Networking
Hardware



Open Networking

Open Networking
Software

Open Networking
Hardware

Our vision for the network is open

Traditional Networking

Proprietary architectures & management tools

Hundreds of protocols

Proprietary networking OS

Proprietary ASICs



Open Networking

Standard orchestration & automation tools

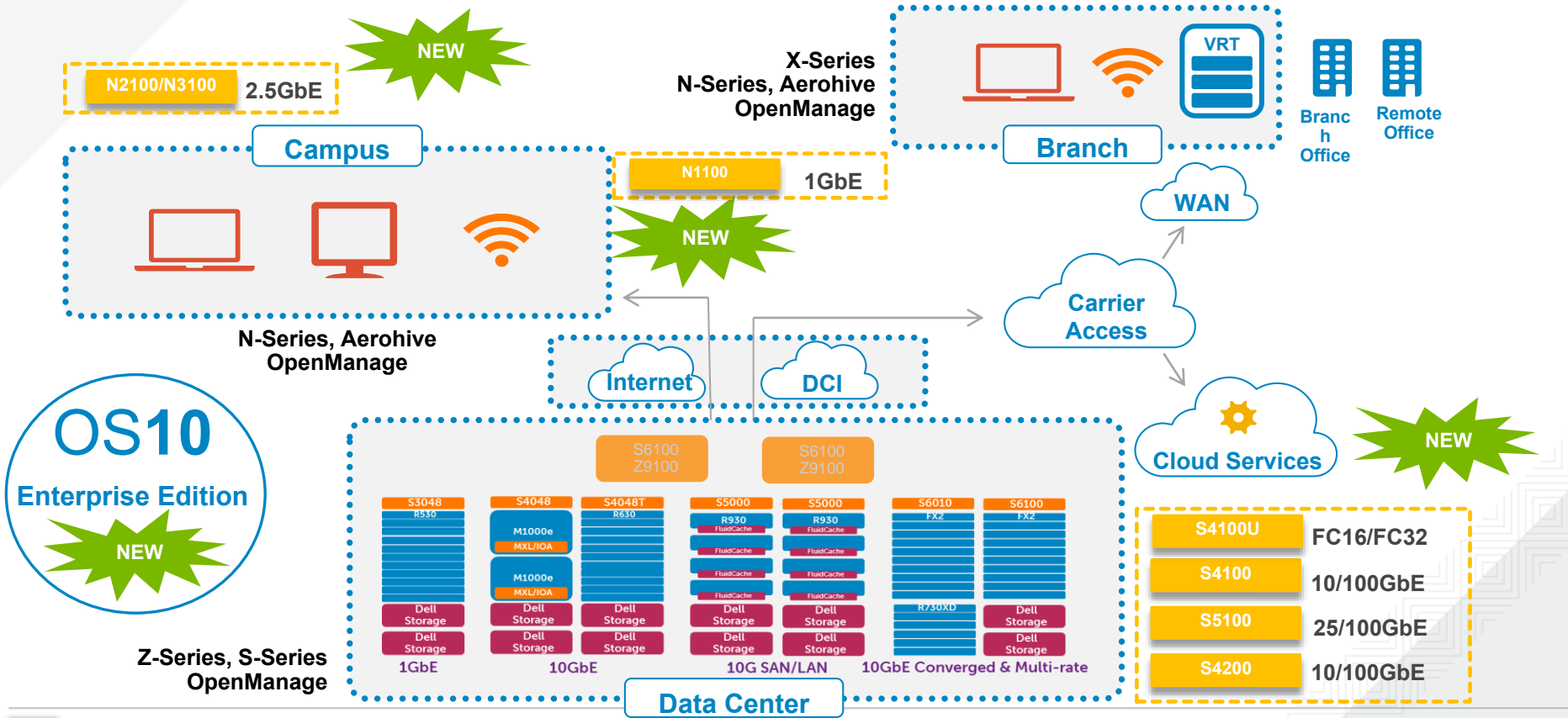
Optional SDN/NVO controller

Any networking OS

Open standard hardware

Merchant silicon

Dell EMC Networking for Enterprise & Cloud

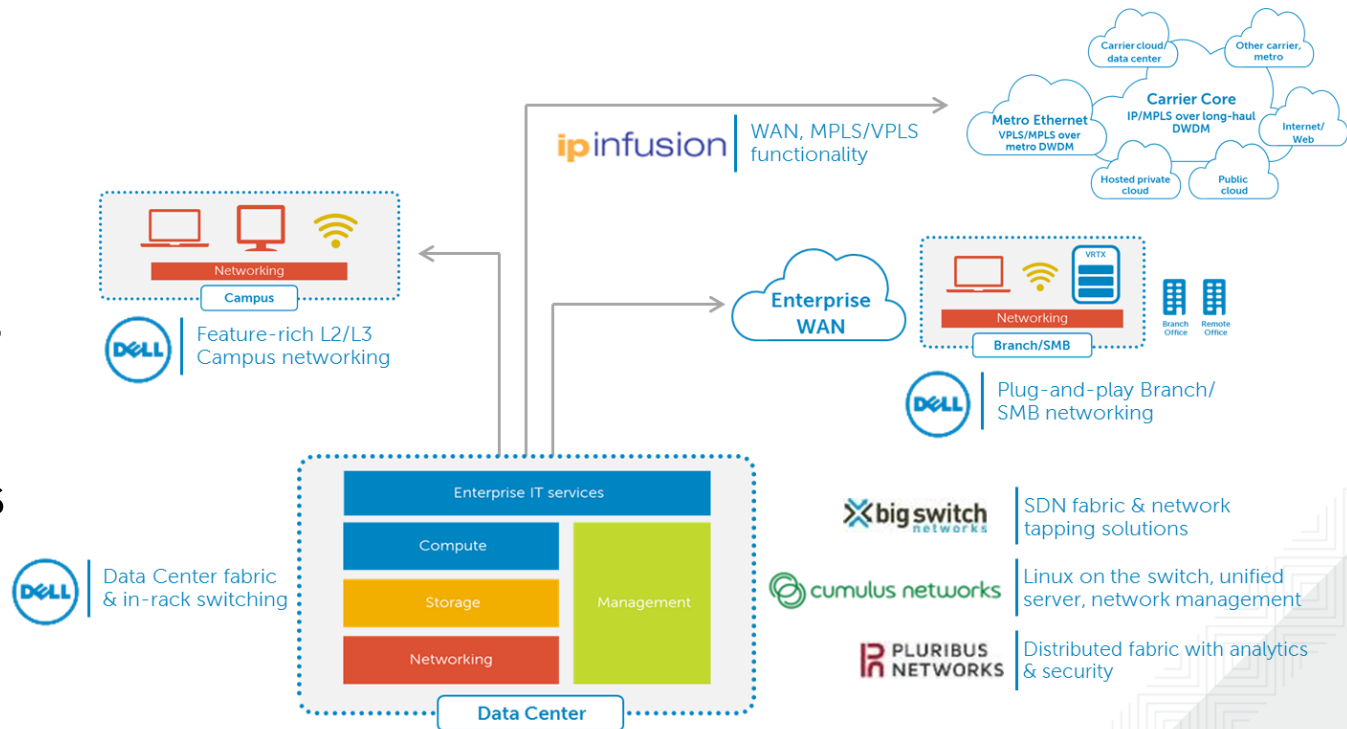


OS10
Enterprise Edition
NEW

Forever changing the networking landscape...

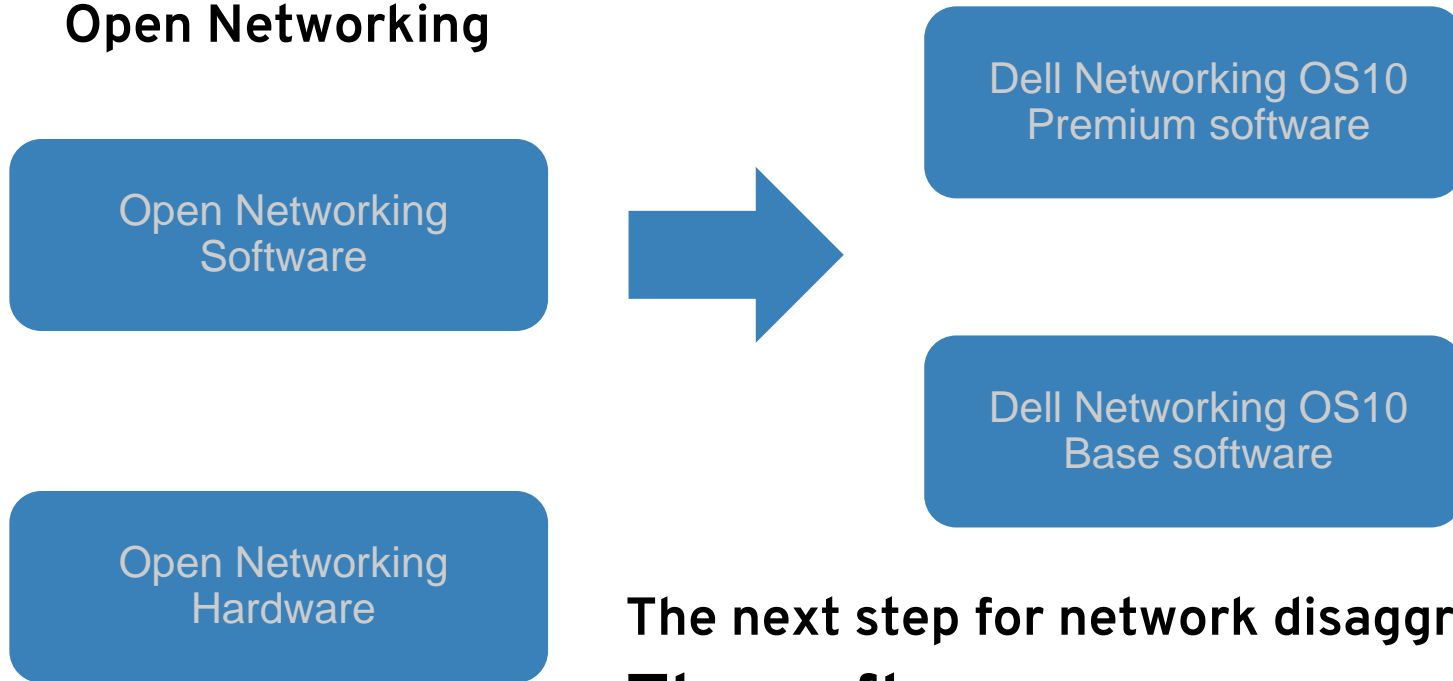
Mix-and-match different networking software packages

Address a wide-range of use-cases and operational models.



And now we're raising the bar again...

Open Networking



The next step for network disaggregation
The software.....

OS10 – Software for the Open Networking era

OS10



DevOps



NetOps

Open Networking Software

Native Linux Apps

- Management Tools
- IP Services
- Linux Networking

3rd Party Apps

- Automation Tools
- Fabric Services
- Security Services

OS10 Apps

- Common Management Services (CMS)
- L2/L3 Protocols
- Policy Control

Development Environment via Control Plane Services (CPS)

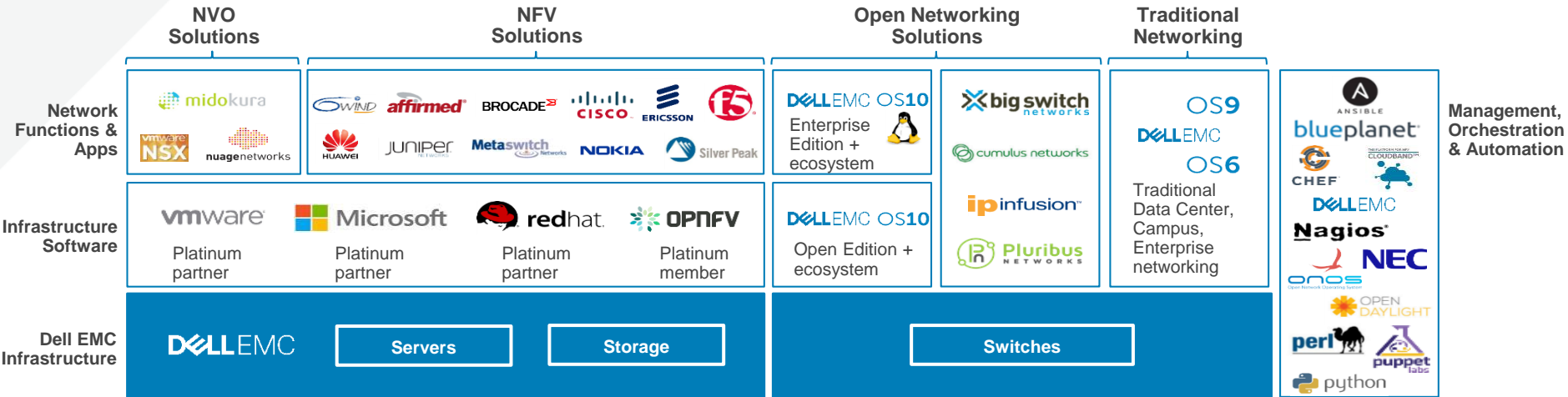
Dell Networking OS10 Base (Native Linux)

Platform Abstraction via OCP Switch Abstraction Interface (SAI)



Modern software for modern operations

Networking Strategic Direction



Dell EMC Networking Strategy

- 1 Harness 10GbE, 25GbE and 40GbE switching technologies to **connect, consolidate and combine in-rack server and storage elements**
- 2 Develop 10-100GbE high-performance, automated data center fabric and open networking solutions to **accelerate east-west traffic and lower cost structures**
- 3 **Simplify end user access** with high-performing unified campus infrastructure designed to scale and simplify.

Open standards | Open source | Open architectures

Verizon NFV deployment

04.25.2016 [News Release](#)

verizon^v

Verizon launches industry-leading large OpenStack NFV deployment

Verizon collaboration with Big Switch Networks, Dell and Red Hat advances open source knowledge; Companies to discuss project at the OpenStack Summit in Austin

AUSTIN, Texas – Verizon has completed the industry's largest known Network Function Virtualization OpenStack cloud deployment across five of its U.S. data centers.

DELLEMC



big switch
networks

Open Architecture Platform



47%

Lower overall TCO over 5 years



3x

Service agility advantage for new service enablement



65%

Lower cost to new service enablement

Source: 2017 ACG Research commissioned by Dell EMC & partners.

The industry's largest Network Function Virtualization OpenStack cloud deployment



Resiliency at Scale Hyperscale-inspired "core and pod" at 5 data centers across the US



No Bandwidth Bottlenecks Leaf-spine architecture with centralized SDN control



Logical Network Design Flexibility Unique NFV workloads with unique logical network



Reduced Operational Complexity Simplified lifecycle management of network control systems



Integrated Security and Visibility Compliant and secure against intrusions

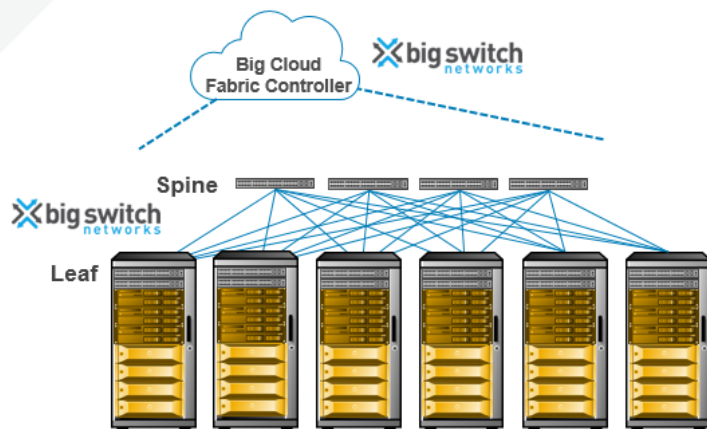
“ We consider this achievement to be **foundational for building the Verizon cloud.** ”

*Adam Koeppe,
VP, Verizon*

“ Verizon is building a next-generation, automated, software-defined network ... to **build a network that changes at the pace of software,** not hardware. ”

*Darrell Jordan-Smith,
VP, Red Hat*

Fabric solutions with Big Switch Networks



Open Networking Solutions



Big Switch Big Cloud Fabric™ (BCF)

- Supports both physical and virtual (multi-hypervisor) workloads and choice of orchestration software.
- Provides L2 switching, L3 routing and, L4-7 service insertion and chaining while ensuring high bisectional bandwidth.
- Scalable fabric, fully resilient with no single point of failure and supports head-less mode operations

Recent showcase

verizon

Dell EMC

big switch networks

redhat

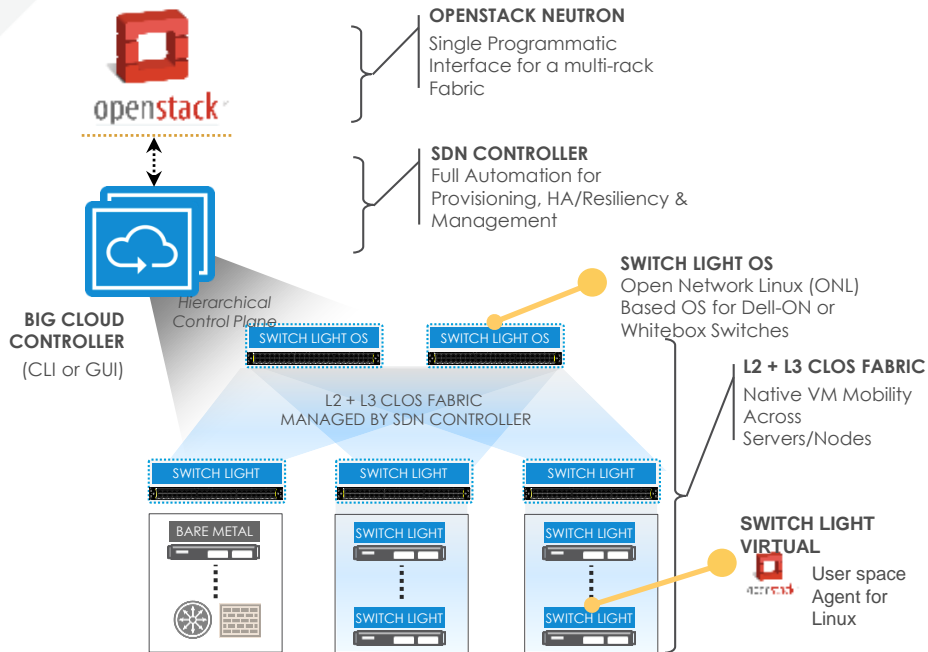
openstack

Need: Elastic, scalable network with faster service enablement

Solution: S6000-ON & S4048-ON with BCF — 50 racks in 5 Data Centers

Results: Resiliency at scale. No bandwidth bottleneck. Design Flexibility. Reduced Operational Complexity. Integrated security and visibility

Big Switch Networks: Big Cloud Fabric (BCF): P + V Fabric



Single “Logical” Switch (Zero-touch Fabric, Dramatic TCO reduction)

Controller Domain: **vLeaf**, Leaf, Spine

High Perf: 10G/40G Leaf/Spine, **10G vLeaf**

vLeaf for Scaling: NAT, DVR, ACL, ...

Resilient: Headless Mode Operations

L4-7 Service Insertion & Chaining
(Physical and Virtual appliances)

Operations: P+V visibility & troubleshooting
(vLeaf – Leaf – Spine – Leaf – vLeaf)

Deployment: OpenStack (KVM)

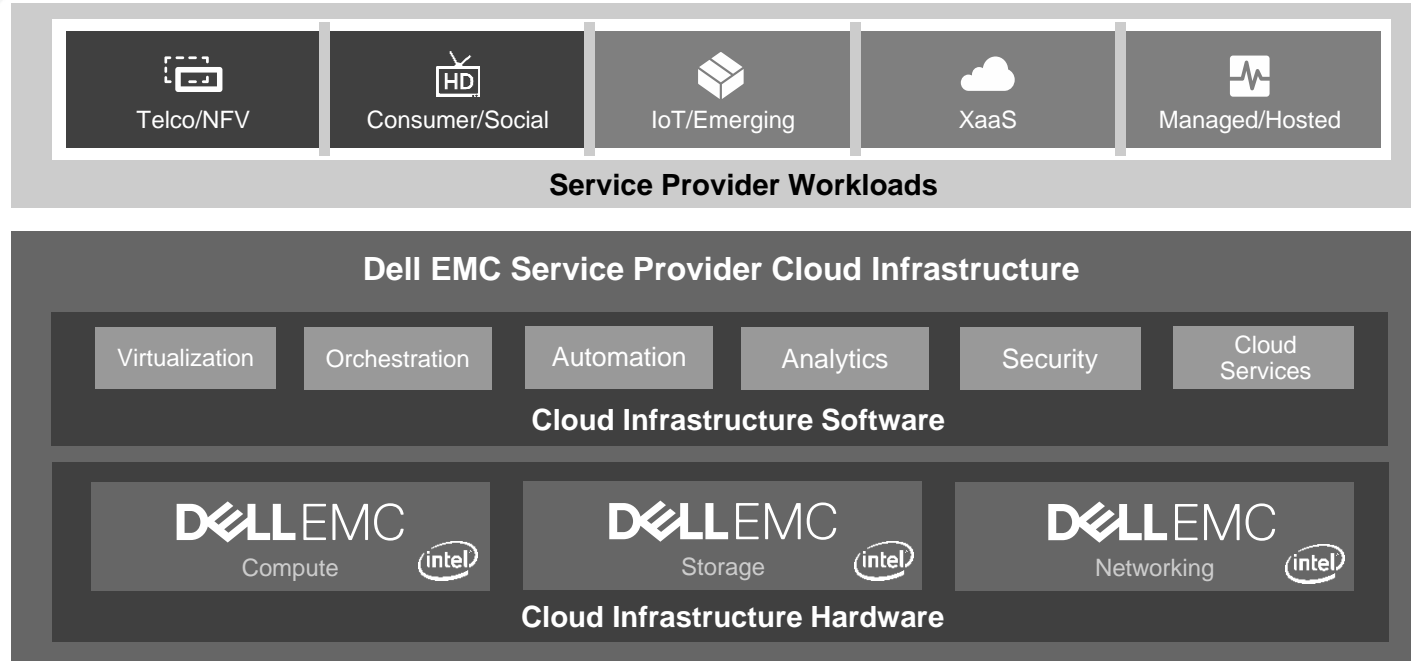
Private/Public
Clouds

Big Data
Analytics

VDI

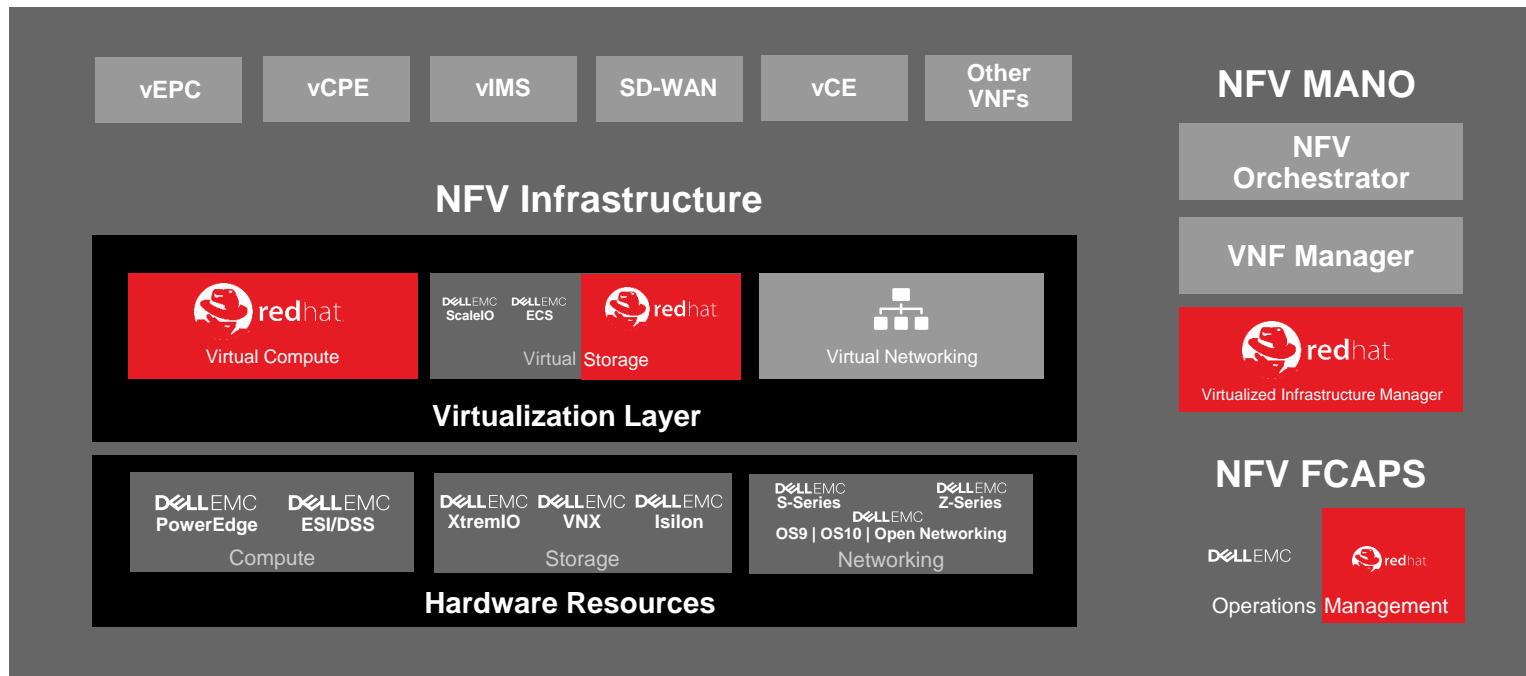
...

Dell EMC Service Provider Cloud Infrastructure



Cloud Compute-centric Cloud-scale Open, Standards-based Future-ready

Dell EMC + Red Hat NFV Solution

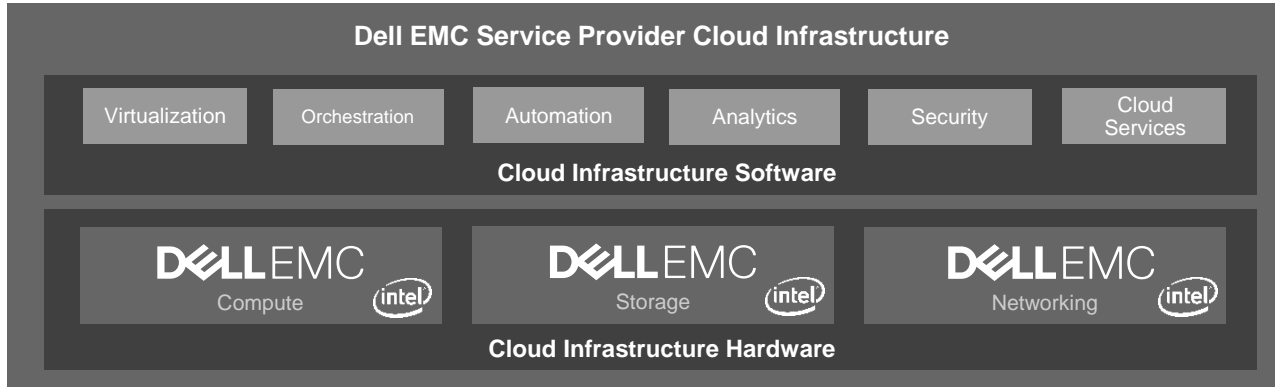


Integrated Validated System

Open-Source Community

Future-Ready

100% Open and Standards-based



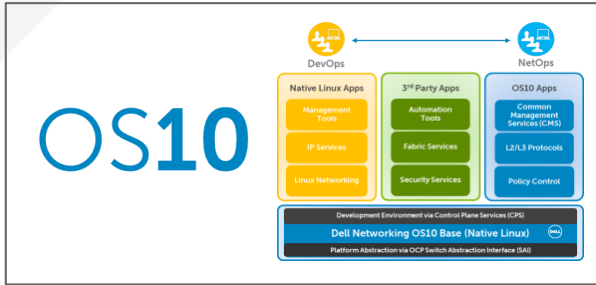
Maximum interoperability

Maximum manageability

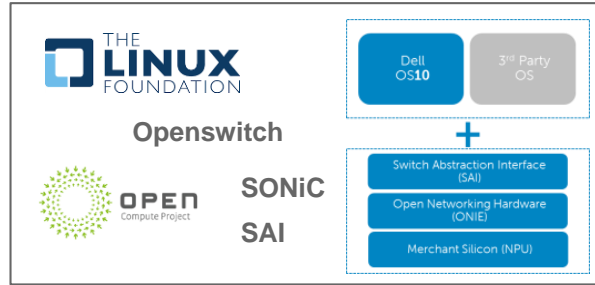
Maximum investment protection

Industry-leading Open Networking & SDN

Open Software



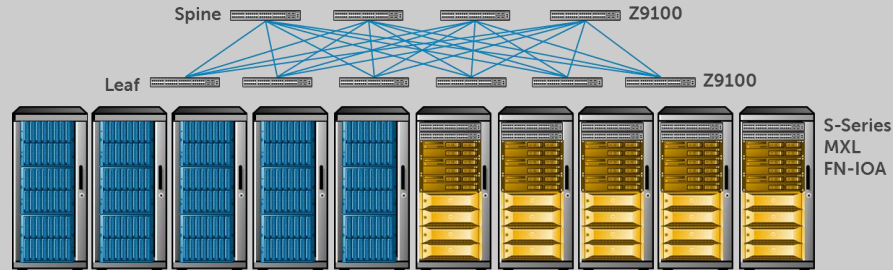
Open Source



Open Ecosystem



Open Architectures





RED HAT OPEN SOURCE DAY

Europe, Middle East & Africa

DELL EMC



#redhatosd