

# Enterprise SONiC Distribution by Dell Technologies

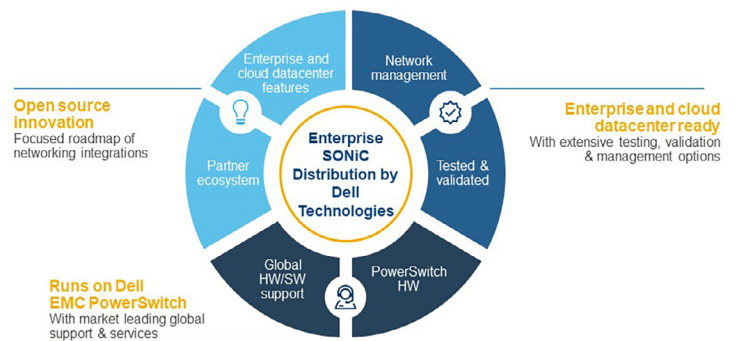
Accelerating the evolution of software-defined networking for the cloud with the next stage of open networking

IT organizations around the globe strive to deliver superior business value by helping their organizations increase productivity, deliver services faster and remain flexible by incorporating the latest technology innovations like automation, containers and cloud. In addition, the use of modern applications and workloads like virtualization, cloud, IoT and AI are pushing the boundaries of existing data centers as more and more traffic moves from the edge of the network to the core into the cloud. These organizations need a modern network infrastructure that can support these demands.

Software for Open Networking in the Cloud (SONiC) represents open source innovation at its finest, and as it evolves and matures, it is expanding beyond the public cloud, into large-scale enterprises, private clouds and service providers, empowering them to modernize their networks, easily address emerging IT scenarios, and overcome evolving business challenges.

Enterprise SONiC Distribution by Dell Technologies helps IT organizations to run their business with the innovation, automation and reliability that comes from a commercial offering of SONiC with production-ready enterprise feature enhancements, hardening and global support targeted for demanding data center leaf and spine fabrics.

- **Open source innovation** – based on SONiC, Enterprise SONiC Distribution by Dell Technologies builds on Dell Technologies long history of collaborating with and contributing to the open source SONiC community with new features and capabilities ranging across the protocol stack and management applications.
- **Enterprise and cloud data center ready** – Enterprise SONiC Distribution by Dell Technologies is enterprise-class tested and validated across hardware and software, field-tested in hyper-scale environments, includes a centralized management platform, and is integrated with a growing ecosystem of partner automation/orchestration applications.



## Open source networking made real

- **Runs on Dell EMC PowerSwitch platforms** – offering the broadest selection of Open Networking switching platforms from a trusted leader backed by our world class supply chain industry-leading support and services options that align with the unique needs of your data center environment.

## Key features and functions

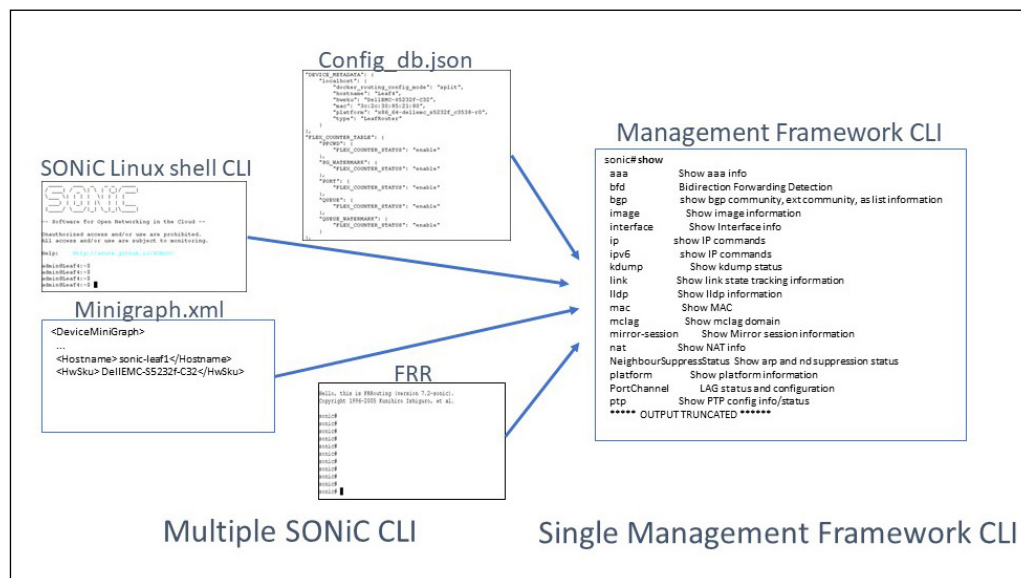
- **Based on Open Source SONiC:** Enterprise SONiC Distribution by Dell Technologies is based on SONiC, an open source network operating system based on Linux that is built around a containerized architecture. SONiC is in production today at multiple web-scale companies for data center fabric deployments and has a thriving developer community and vendor ecosystem.
- **Enterprise and cloud data center features:** Enterprise SONiC Distribution by Dell Technologies integrates a host of enterprise-ready features including select Layer 2 and Layer 3 protocols, Quality of Service capabilities, as well as key management protocols and the Dell EMC SmartFabric Director fabric management platform\*.

- **Centralized management:** Enterprise SONiC Distribution by Dell Technologies Management Framework is designed to improve agility and visibility by adopting open and industry standards such as OpenConfig, DevOps friendly programmatic Northbound interfaces gNMI and REST, and streaming telemetry to enable advanced analytics. For operational simplification, the Management Framework includes a centralized, intuitive and holistic command line interface (CLI) that will help integration with existing practices.
- **Integration with Dell EMC PowerSwitch platforms:** Enterprise SONiC Distribution by Dell Technologies has been fully qualified on select Dell EMC PowerSwitch Z series and S series platforms for full hardware support including LEDs, power, PHYs, environmentals, documentation, etc.
- **Testing and validation:** Enterprise SONiC Distribution by Dell Technologies is system tested and validated across the PowerSwitch hardware platforms and the full set of software features including Layer 2 and Layer 3 functionality, congestion control, power consumption,

address capacities, convergence times, scalability, etc. Enterprise SONiC Distribution by Dell Technologies is also field tested in several hyper-scale environments.

- **Dell Technologies global support & services:** Enterprise SONiC Distribution by Dell Technologies is backed by a world-class supply chain and industry leading support and services spanning 165 countries and 60K+ partner professionals to help ease the transition to open source.
- Enterprise SONiC Distribution by Dell Technologies 3.1 is supported on the following PowerSwitch switches:
  - PowerSwitch Z series: Z9332F-ON, Z9264F-ON, Z9100-ON
  - PowerSwitch S series: S5296F-ON, S5232F-ON, S5248F-ON, S5224F-ON, S5212F-ON
  - PowerSwitch N series: N3248TE-ON
- Enterprise SONiC Distribution by Dell Technologies 3.1 is based on 201911 Azure Sonic version and SAI version 3.8.

*\*Future deliverable*



## Technical specifications

### Ethernet

- IEEE 802.1Q Virtual LAN (VLAN) Tagging
- IEEE 802.1p Class-of-Service Prioritization and Tagging
- IEEE 802.1v VLAN Classification by Protocol
- IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
- IEEE 802.3x Flow Control (Pause Frames)
- IEEE 802.3z 1000BASE-X

### Layer 2 and Layer 3 Protocols

- Border Gateway Protocol (BGP) (v4, v6)
- iBGP
- eBGP
- BGP unnumbered
- BGP-Allow Autonomous System (AS)
- BGP Peer Auto-shutdown
- OSPFv2
- Route Reflector
- Route Policies
- Static routes
- BGP EVPN Control Plane (Type 2, 3, and 5)
- L3 VxLAN
- Layer 3 Access Control Lists (ACLs)
- IPv4 ACL
- Bidirectional Forwarding Detection (BFD)
- Unidirectional Link Detection (UDLD)
- 64-Way Equal-cost Multi-path (ECMP)
- Virtual Routing and Forwarding (VRF) Lite
- Virtual Router Redundancy Protocol (VRRP) (IPv4)
- IPv4/IPv6 Dual Stack
- Internet Control Message Protocol (ICMP) v6 Route-Advertisement
- IPv6 routing
- Wire-speed routing for IPv4 and IPv6
- IGMP Snooping (v1, v2, v3)
- Multi-chassis LAG (MCLAG)
- PVST
- RPVST+
- Network Address Translation (NAT)
- CoPP (Control Plane Policing)
- Policy Based Routing for IPv4 and IPv6

### Quality of Service

- Class of Service (CoS) IEEE 802.1p
- Differentiated Services to Code Point (DSCP) to Traffic Class Mapping
- Random Early Discard
- Scheduling: Strict Priority (SP), Deficit Weighted Round-Robin (DWRR)
- Priority Flow Control (PFC)
- Explicit Congestion Notification (ECN)

### Manageability, Automation and Monitoring

- Zero-touch Provisioning (ZTP)
- IPv4/IPv6 management
- Management Framework Command Line Interface (CLI)
- Programmable Interfaces: REST and

- gNMI
- OpenConfig data models
- Dynamic Port Breakout
- Secure Socket Shell (SSH)/SSHv2
- Role-based Access Control (RBAC)
- Link Layer Discovery Protocol (LLDP) IEEE 802.1AB
- Management Information Base (MIB) II RFC 1213
- Syslog
- SNMPv2/v3
- Out-of-band management
- Network Time Protocol (NTP)
- Management Access Control Lists (ACL's)
- Dynamic Host Configuration Protocol (DHCP) Relay
- TACACS+
- Radius
- sFlow
- Everflow/ERSPAN
- Inband Flow Analyzer\* (IFA)
- Mirror on Drop\* (MoD)

### Ordering information

Enterprise SONiC Distribution by Dell Technologies is available in two basic bundles, Enterprise or Cloud, with corresponding sub-categories:

#### Cloud Standard or Premium

- Standard – includes features (such as eBGP, ZTP, Programmatic API's, QoS, etc.) needed for cloud scale fabric underlay deployments and telemetry functionality (such as thresholds and queue monitoring)
- Premium – includes the Cloud Standard features plus advanced features, such as Inband Flow Analyzer (IFA) and Mirror on Drop
- 1GbE, 25/100GbE, or 400GbE platform speeds
- 1 year, 3 year or 5 year subscriptions

#### Enterprise Standard or Premium

- Standard – includes Cloud Standard plus features needed for data center fabric overlay deployments (such VxLAN EVPN, MCLAG, PVST, and IGMP)
- Premium – includes the Enterprise Standard features plus advanced features, such as Inband Flow Analyzer (IFA) and Mirror on Drop
- 1GbE, 25/100GbE, or 400GbE platform speeds
- 1 year, 3 year or 5 year subscriptions

For ordering information please contact your local Dell Technologies sales office.

*\*Future feature*



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Dell Technologies Consulting Services provides industry professionals with a wide range of tools and the experience you need to design and execute plans to transform your business.

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