

# Enterprise SONiC Distribution by Dell Technologies

Accelerate modern workloads like GenAI with modernized, high-performance fabrics

“By 2025, 30% of organizations that operate large data center networks (more than 250 switches) will run SONiC in some portion of their production environments an increase of over 10x from late 2022”

Gartner<sup>1</sup>

## Modern Infrastructure Trends

### Modern Architecture:

- Linux and container centric
- Built for simplicity and scale
- Cloud native

### Operational Agility:

- Mainstream Automation tools
- CI/CD pipeline integration
- Non-disruptive upgradeability

### Flexibility & Choice:

- Disaggregated software
- Ecosystem of tools
- Choice of Silicon
- Multi-vendor

### TCO Savings:

- Operational savings
- Open Source based ecosystem & tools

## The Open Networking Evolution

To meet the challenges of modernizing the data center to support digital transformation, today's network needs to be open to change. Digital transformation is driving the adoption of emerging technologies and datagrowth that puts new demands on rigid legacy networks that struggle to perform under the strain. Closed, proprietary solutions of yesterday have trouble adapting to the demands of today's enterprise, creating management complexity, stalling the pace of innovation, and hampering organizations' ability to shift and meet new business objectives at a time when network modernization plays a pivotal role in competitive advantage.

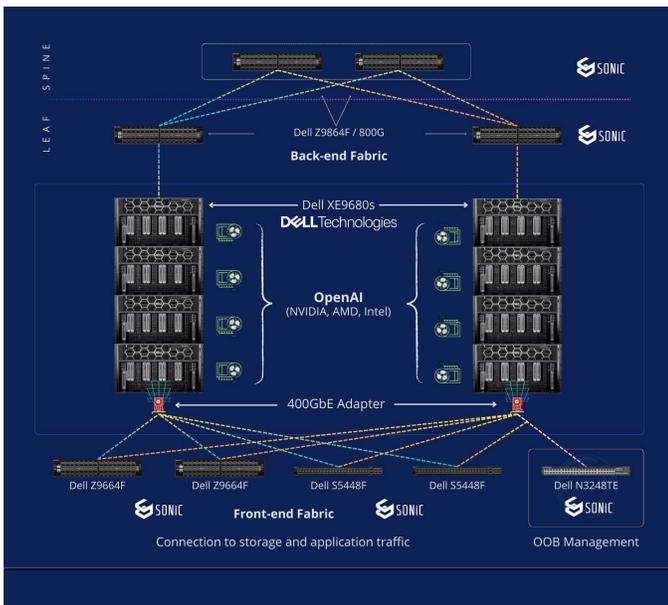
By decoupling network software from the underlying hardware, open networking provides the ability to quickly add features and applications for a network that delivers maximum – and measurable – business value. Open networking frees enterprises from proprietary and costly networking solutions, resulting in a seamless and simplified path to future innovation.

## Software for Open Networking in the Cloud (SONiC)

IT organizations around the globe are striving to create a modern network infrastructure that can meet constantly shifting business demands, increase productivity, deliver services faster and remain flexible by incorporating the latest technology innovations like automation, multi-cloud and generative AI. 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 and into 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. Based on Debian Linux and built around a containerized architecture, Software for Open Networking in the Cloud (SONiC) uses standards-based APIs to simplify integration and provide the flexibility to adapt applications to your specific environment — running only what's required. Proven at scale in the world's largest cloud networks, SONiC enables containerized applications, linking them quickly across the network using a common language to deploy network applications on any hardware. The resulting containerized architecture can be easily managed and upgraded to support a variety of services.

<sup>1</sup>Gartner Blog (Andrew Lerner – Gartner VP Analyst, DC Infrastructure)



*GenAI Fabric Architecture with SONiC (example)*

A large community of more than 850 members, including major cloud providers and network hardware OEMs and ODMs, is constantly evolving and improving SONiC with the development of new features, functionality and application support.

### Enterprise SONiC Distribution by Dell Technologies

Dell Technologies' Enterprise SONiC Distribution is revolutionizing IT with its commercial-grade SONiC offering, now enhanced for **GenAI deployments**. This robust platform delivers innovation, automation, and reliability, with new features like **adaptive routing**, **dynamic load balancing**, **priority group mapping** and **RoCE congestion control** for optimized high-bandwidth traffic flows. It supports the latest silicon and hardware, including the Dell PowerSwitch Z9864-ON and Broadcom's new 400GbE Ethernet adapter, doubling throughput capabilities. With validated use cases for common modern workloads like AI and Dell server and storage solutions, it's also the first SONiC distribution to meet stringent **Federal FIPS & USGv6 certifications**.

In addition, Dell's new orchestration solution, **SmartFabric Manager for SONiC**, offers detailed performance insights with advanced analytics, simplifying management and bolstering resiliency of SONiC fabrics. Embrace a centrally managed, unified network operating system that spans your entire fabric, from edge to core to cloud, elevating productivity and minimizing operational overhead.

### Dell's Enterprise SONiC distribution brings:

- **Open Source Innovation:** Dell Enterprise SONiC enhances the community distribution with Dell's history of open source collaboration, adding new features across the protocol stack and management tools
- **Edge, Enterprise, and Cloud Readiness:** Tested for enterprise, Dell Enterprise SONiC offers a unified network operating system (NOS) with centralized management, proven in hyper-scale settings, and compatible with partner automation tools.
- **Flexible Hardware Choices:** Dell Enterprise SONiC is compatible with a wide range of Dell PowerSwitch data center and edge switches, and also supports certain third-party switches, ensuring diverse options for network design.
- **Resilient, Modern and Flexible Fabrics:** Build secure, feature-rich fabrics with scalability, redundancy and optimized traffic flows supporting high-bandwidth applications like GenAI.

### The Dell Technologies Advantage

Dell Technologies offers a scalable, cloud-compatible data center network with tested SONiC OS, backed by global enterprise support tailored to your network's specific requirements. Leading in Open Networking, Dell's Enterprise SONiC Distribution merges open-source SONiC with comprehensive OS support, targeted feature development, and validated applications for major enterprises, telecoms, cloud providers, and retailers.



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