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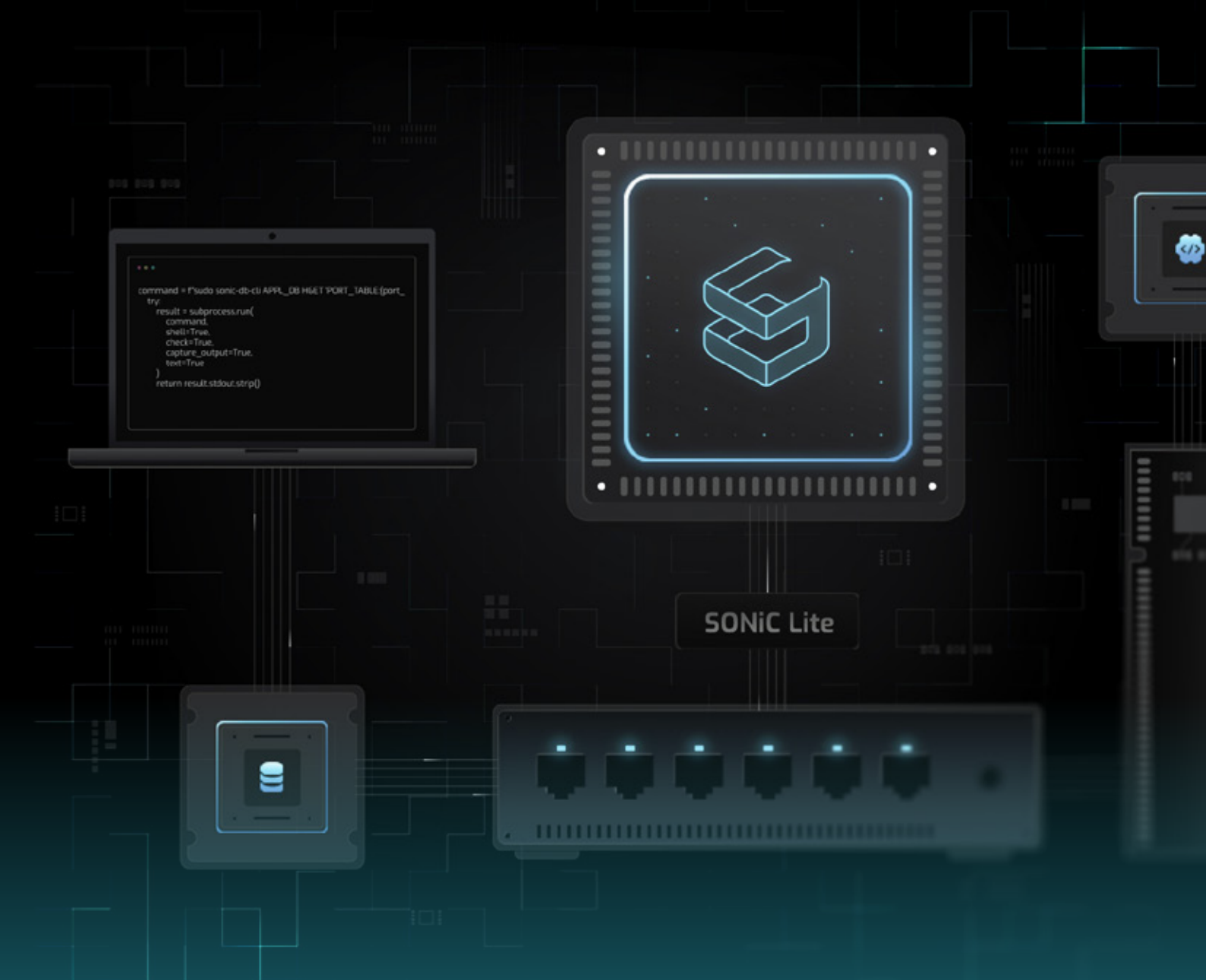
SONiC Lite

SONiC Lite is an enterprise distribution of SONiC by PLVision for cost-effective management and access platforms in data center, edge, and campus deployments. The PLVision team optimized the SONiC components while preserving vendor-specific elements such as SAI and platform integrations.

PRODUCT BRIEF **November 2025**



Addressing Industry Challenges with SONiC Lite

Equipment vendors and enterprises face a critical challenge: finding a solution that meets the efficiency requirements of access and management switches without compromising performance or functionality. Traditional SONiC, designed primarily for data centers with higher power, cost, and resource considerations, falls short in scenarios where lightweight, cost-effective platforms are essential.

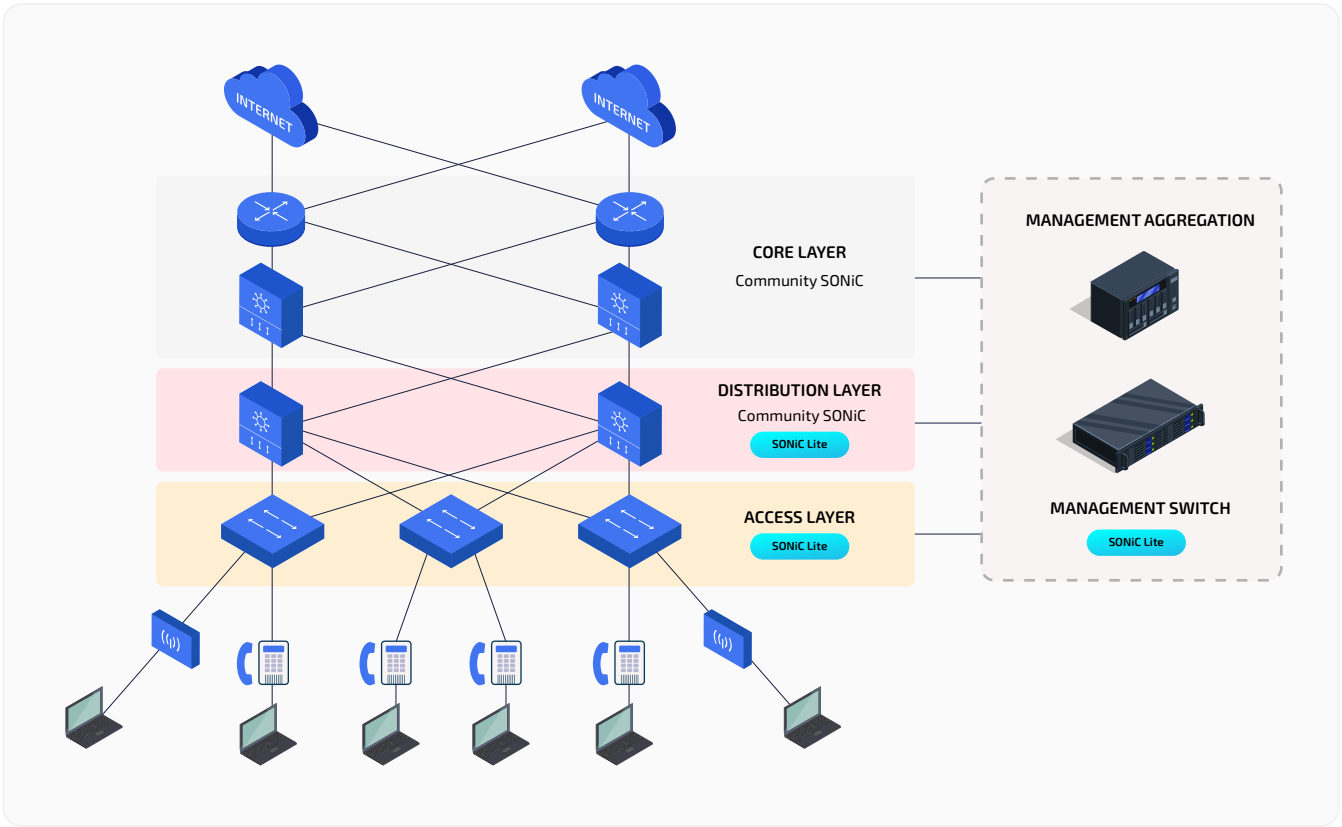
The key issue lies in the resource-intensive nature of traditional SONiC, which demands powerful CPUs, substantial storage, and extensive RAM, making it challenging for campus and edge deployments that prioritize efficiency. Additionally, the unique functional demands of these environments introduce further complexities.

This is where SONiC Lite emerges as a transformative solution. Tailored for campus and edge networks, our distribution redefines efficiency by optimizing SONiC for cost-effective platforms. It not only enables seamless

SONiC Lite Use Cases

We have tailored Community SONiC specifically for the access layer, focusing on optimizing the most critical functionalities primarily used in data centers. By carefully selecting and enhancing essential features, SONiC Lite empowers you to build a simple, reliable, and secure networking operating system. This streamlined version of SONiC ensures dependable performance on access and management switches.

SONiC Lite operates as a critical component in the management plane, situated above edge switches to oversee and optimize their performance.



Access Switch Use Case

At the access layer – the foundation of the hierarchical inter-networking model – SONiC Lite enables seamless connectivity for end devices such as PCs, printers, and wireless access points. This layer ensures continuous network connections for end devices regardless of their location while aligning its design with the requirements of the upper network layers.

Out-of-Band (OOB) Management Switch Use Case

SONiC Lite is an optimized network OS distribution specifically designed for OOB management switches in data center, edge, and campus networks. It offers a cost-effective, scalable, and efficient solution that centralizes and simplifies network management through a unified control plane. With SONiC Lite, network monitoring and maintenance become streamlined, ensuring smoother operations and enhanced operational efficiency.

Want to experience SONiC Lite? Get started today with our new **SONiC Lite Demo.**

SONiC Lite Capabilities

Building on the latest updates from Community SONiC, SONiC Lite delivers a comprehensive suite of features designed to enhance security, streamline network management, and optimize performance.

SONiC Lite provides centralized authentication, authorization, and accounting through advanced protocols such as TACACS+ and RADIUS. It also includes 802.1X for port-based network access control (PNAC), ensuring that only authorized devices can access your network. Learn **how to configure PNAC** with our step-by-step guide.

The platform offers essential Layer 2 functionalities, including:

- **LLDP:** Device discovery and topology mapping for better network visibility.
- **xSTP:** Rapid network convergence and loop prevention.
- **VLANs:** Network segmentation and isolation for enhanced performance and security.
- **LACP:** Link aggregation and redundancy to ensure seamless network availability.
- **IGMP Snooping:** Intelligent multicast traffic management for efficient bandwidth utilization and optimized network performance.
- **IEEE 802.3at LLDP PoE:** Dynamic power negotiation and delivery to connected devices for efficient energy management and optimal PoE allocation.
- **IEEE 802.1AE MACsec (Celestica platforms only):** Secures Ethernet frames on the link layer, providing encryption and integrity between directly connected devices.

SONiC Lite supports IPv4/IPv6 for seamless IP operations and static routing for flexible configuration. It also provides Access Control Lists (L3-L4) for secure traffic filtering and enhanced Quality of Service (QoS) features to prioritize critical traffic, ensuring optimal performance for essential applications.

Additional features include:

- **DHCP Server:** Automatic IP address assignment for simplified network management.
- **PoE++:** Centralized power management for connected devices.
- **Storm Control:** Prevents disruptions caused by excessive traffic.
- **Full KLISH CLI support:** A Cisco-like interface for simplified configuration and management.
- **Migration to SONiC 202405:** Improved scalability and performance.

The enhanced OLS capabilities enable cloud-based management for campus and multi-dwelling unit (MDU) deployments. This update future-proofs networks for high-bandwidth, low-latency applications, paving the way for full OLS functionality in upcoming releases.

Explore the full feature list and see how SONiC Lite can transform your network:

Ethernet	
Discovery and Management	IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
Security	IEEE 802.1AE (MACsec)*** IEEE 802.1x (NAC)
Spanning Tree Protocol	IEEE 802.1s (PVST)
Link Aggregation	IEEE 802.3ad Link Aggregation Bundles / LACP
Quality of Service (QoS)	IEEE 802.1p Class-of-Service Prioritization and Tagging IEEE 802.1Qbb Priority Pause frames (PFC) IEEE 802.3x Flow Control (Pause Frames)
VLAN Management	IEEE 802.1Q VLAN Tagging

Layer 2 and Layer 3 Protocols	
Address Resolution and Discovery	Address Resolution Protocol (ARP) Neighbor Discovery Protocol (NDP)
Spanning Tree Protocol	Per VLAN Spanning Tree (PVST) Multiple Spanning Tree Protocol (MSTP) BPDU Guard BPDU filtering Root Guard
Link Aggregation and Redundancy	Static LAG LACP Fast Rate and LACP Fallback MCLAG (Multi-Chassis Link Aggregation for active-active uplinks, providing redundancy and load balancing across multiple switches)*
Multicast	IGMP Snooping
LLDP PoE	IEEE 802.3at LLDP PoE
DHCP Services	DHCP IPv4/v6 Client DHCP IPv4/v6 Relay DHCP IPv4 Server
Routing Protocols	IPv4 and IPv6 routing Static routing Border Gateway Protocol (v4, v6) IBGP EBGP BGP-Allow AS** Dynamic BGP Neighbor OSPFv2 IS-IS Route Policies** Route Reflector** Equal-Cost Multi-Path (ECMP)
Virtual Routing and Forwarding	VRF Management VRF

Quality of Service

Traffic Scheduling	Scheduling: Strict Priority (SP) Weighted Round-Robin (WRR) Deficit Weighted Round-Robin (DWRR)
Traffic Management	BUM Storm Control
QoS	Class of Service (CoS) IEEE 802.1p DSCP Marking / Remarking DSCP to Traffic Class Mapping
Congestion Management	Explicit Congestion Notification (ECN) Random Early Discard (RED) Weighted Random Early Detection (WRED)
Flow Control	Control Plane Policing (CoPP) Priority Flow Control (PFC) PFC Watchdog

Manageability, Automation, and Monitoring

Monitoring and Management	Critical Resource Monitoring (CRM) IPv4/IPv6 Management Syslog SNMP v1, SNMP v2C, and SNMP v3 SNMP Trap Infra Support Link Layer Discovery Protocol (LLDP) IEEE 802.1AB
Network Interfaces	REST and gNMI Interfaces through OpenConfig YANG
Access and Control	Command Line Interface (CLI) SSH/SSHv2 Telnet FTP / TFTP
Management Protocols	Out-of-band management
Diagnostic Tools	Traceroute IPv4/IPv6 Ping IPv4/IPv6
Time Synchronization	Network Time Protocol (NTP)

Security

Authentication and Authorization	RADIUS TACACS+
Access Control	Access Control List (ACL) Media Access Control Security (MACsec)***
Secure Access	SSH/SSHv2
Protocol Security	MD5 authentication for BGP **

System and Platform Infrastructure	
Port Management	Port utilities Dynamic Port Breakout SFP Utilities Transceiver Parameter Tuning
Monitoring and Diagnostics	DOM Information Display Interface Statistics Temperature monitoring and thermal alarms Power Monitoring (Power, Current, Voltage) System Health System State Hardware Watchdog Locator LED Support (Beacon) Fan Control Board information (EEPROM)
Configuration Management	Backup / Restore Full System Reset / reboot Factory Reset Configuration
Container Management	Third-Party Container Management
Performance Optimization	Jumbo Frames
Interface Management	Interface Aliasing (IS-standard Interface Naming)

Debug and Service	
Logging and Diagnostics	Audit Logging and Syslog Linux Kernel Dump Flow & Drop Counters

Other	
System Management	Wake-on-LAN Commands
Network Configuration	Loopback Interfaces Sub interfaces
Power over Ethernet (PoE)	PoE

* Planned for Q4 2025

** Planned for Q1 2026

*** Celestica platforms only

Hardware Compatibility List

A wide range of switch models, including popular white-box options, supports SONiC Lite, providing businesses with unmatched flexibility and choice.

SKU	MODEL	ASIC	Port Config
wistron	ES-2227-54TS PoE and no PoE	Marvell AC5X family	32x1G+16x2, 5G+6x25G
Edge-corE NETWORKS	ECS4650-54P PoE	Marvell AC5X family	48x1G+6x25G
Edge-corE NETWORKS	ECS4650-54T	Marvell AC5X family	48x1G+6x25G
Edge-corE NETWORKS	ECS5550-54X	Marvell Prestera Aldrin2	48x10G SFP+ & 6x100G
Edge-corE NETWORKS	ECS5550-30X	Marvell Prestera Aldrin2	24x10G SFP+ & 6x100G
Edge-corE NETWORKS	ECS4655-30P PoE	Marvell AC5X family	24x2.5G+6x25G
Edge-corE NETWORKS	ECS4655-30T	Marvell AC5X family	24x2.5G+6x25G
Micas NETWORKS	M2-W6510-48GT4V	Broadcom	48x1G+4x25G
ufiSpace	S7801-54XS	Broadcom	48x10G SFP+ & 6x100G QSFP28
Celestica	ES1000-24P	Marvell AC5X family	24x1G+4x25G SFP28
Celestica	ES1000-48P	Marvell AC5X family	48x1G+4x25G SFP28
Celestica	ES1000-48CP	Marvell AC5X family	48x1G+4x25G SFP28
Celestica	ES1500-8P	Marvell AC5X family	8x2,5 GbE+4x25G SFP28
Celestica	ES1500-24	Marvell AC5X family	24x2,5 GbE+4x25G SFP28
Celestica	ES1500-48	Marvell AC5X family	48x2,5 GbE+4x25G SFP28

We are actively expanding our hardware compatibility list and enhancing functionality to better align with the evolving needs of our clients and the dynamic market demands. Stay tuned for further expansions of SONiC Lite's HCL, which can be viewed **here.**

Contact Us

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