



# Community SONiC Technical Specifications Brief

## Introduction

SONiC is a micro-services based, open-source Linux operating system tailored for data center and edge networking. Designed to integrate effortlessly with multi-vendor whitebox switches, it is a fundamental component in many of the world's largest data centers. SONiC delivers high-capacity networking solutions combined with outstanding price performance, marking a significant advancement in open-source networking. It reduces operational complexities, increases network flexibility, and lowers the total cost of ownership (TCO), supporting a wide range of micro-services and automation tools, thus empowering an extensive ecosystem.

## Community SONiC

### ► Completely Open Source

Open Source SONiC is designed with transparency and collaboration at its core, offering a completely open-source solution for developers and organizations. Community SONiC provides full access to the source code, enabling customers/users to customize and enhance the product to meet their unique needs. With a thriving community of contributors, regular updates, and extensive documentation, community SONiC ensures adaptability and innovation without vendor lock-in.

### ► Features Ready for Data Center and Edge

The Community SONiC Distribution provides essential features for data center and edge deployments, including Layer 2 and Layer 3 protocols, management capabilities, overlay and underlay protocols for data center interconnect, QoS, and RoCEv2 support for GPU-based fabric networks.

## ► Testing and Validation

Community SONiC undergoes rigorous testing and validation across multi-vendor platforms, supporting HWSKUs with speeds ranging from 1G to 800G. Leveraging the Aviz Fabric Test Automation Suite (FTAS) at our state-of-the-art Open Networking Experience (ONE) Center, it ensures robust feature and functionality support for data center, edge, and GPU-Fabric deployments, offering an advanced environment for SONiC-based solutions.

## ► Global support & Services

Community SONiC is backed by a world-class support team and in-house SONiC experts helping with pre and post deployment.

## ► SinglePane Management & Observability

The Open Networking Enterprise Suite (ONES) from Aviz is a comprehensive Network Orchestration and Observability platform tailored for multi-vendor SONiC deployments. ONES offers a unified solution, delivering in-depth visibility into data center networks while providing 24x7 support for SONiC environments. Equipped with a robust analytics engine, it empowers users to quickly identify and resolve network issues, addressing common anomalies and disruptions with ease.

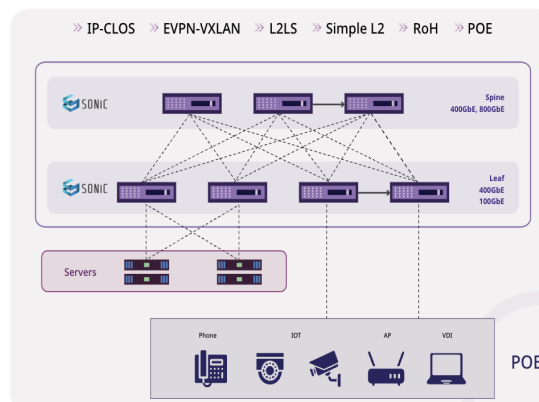
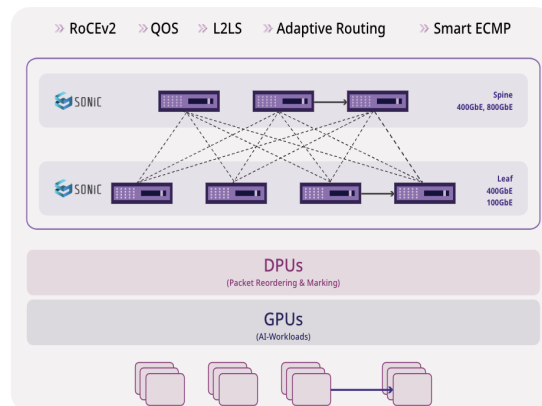
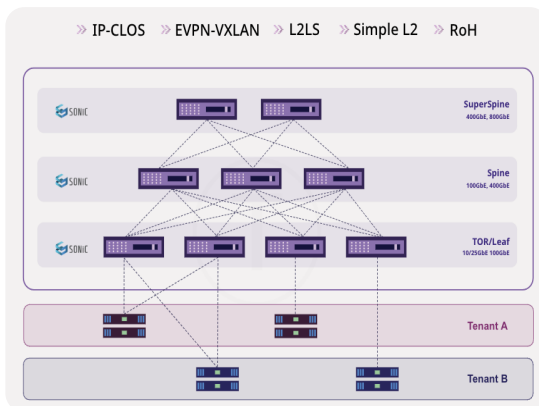
# Observability and Orchestration

ONES

ISCLI

gNMI

Ansible



# Technical Specifications

## Layer 2 Features

- LLDP Link Layer Discovery Protocol
- 802.1Q VLAN Classification and tagging
- FDB MAC Learn/Age
- Spanning Tree
- Per VLAN Spanning Tree (PVST)
- Multiple Spanning Trees (MSTP)
- BPDU Guard
- Root Guard
- Spanning Tree Portfast
- Static Link Aggregation
- LACP: IEEE 802.3ad
- LAG Hash
- Storm Control
- MCLAG
- 802.1x

## Layer 3 Features

- Routed Port
- Routed PortChannel
- SVI
- ARP
- Sub-interface
- IPv6 Neighbor Discovery
- IPv6 Route Advertisement
- 64-way ECMP
- Border Gateway Protocol (BGP) (v4, v6)
- iBGP
- eBGP
- BGP unnumbered
- BGP EVPN Control Plane (Type 2, 3, and 5)
- Bidirectional Forwarding Detection (BFD)
- DHCP Relay
- Static Routes
- Virtual Routing and Forwarding
- Virtual Router Redundancy Protocol (VRRP)

## Management and Monitoring

- Zero Touch Provisioning
- SNMPv2/v3
- SSH
- NTP
- Management VRF
- SYSLOG
- Sflow
- ERSPAN
- AAA
- TACACS+
- Radius
- ACLs for IPV4
- ACLs for IPV6
- Ansible Playbooks
- Aviz ONES Industry Standard CLI (ISCLI)
- Streaming Telemetry (gNMI)

## Platform and Ports

- Speed 1G, 2.5G, 10G, 100G, 400G, 800G
- Dynamic Port Breakout
- Auto-negotiation
- FEC
- CoPP
- Optics

## Data Center Interconnect

- Layer 2 VXLAN
- Layer 3 VXLAN
- EVPN-VXLAN
- EVPN Multihoming

## Traffic and Quality of Service (QoS)

- Interface Counters
- Queue Counters and Drops
- RoCEv2
- Class of Service (CoS) IEEE 802.1p
- Differentiated Services Code Point (DSCP) to Traffic Class Mapping
- Priority Flow Control (PFC)
- Scheduling: Strict Priority (SP), Deficit Weighted Round-Robin (DWRR)
- Explicit Congestion Notification (ECN)

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