OPEN POSSIBILITIES.
SONiC Community 2021 Releases and Beyond
SONiC 2021 Update and Beyond

Yanzhao Zhang, Senior Product Manager, Microsoft
Rita Hui, Principal Dev Manager, Microsoft
Xin Liu, Principal PM Manager, Microsoft
Gartner report on SONiC

“By 2025, 40% of organizations that operate large data center networks (more than 200 switches) will run SONiC in production environments…

Due to this rapidly expanding customer interest and commercial ecosystem, there is a strong possibility that, during the next three to six years, **SONiC will become analogous to Linux as a server OS**, allowing enterprises to standardize on an NOS that is supported across hardware vendors.”

[Gartner 2021 Market Guide for Data Center Switching](#)
SONiC – a non-traditional switch NOS

OPEN POSSIBILITIES.
Expanding to more scenarios rapidly
SONiC Eco-system

Welcome

Merchant Silicon

Switch Platform

Adoption

System/Service
Community growth

- 2 releases/year
- 400 ~ 800 commits/month
- 1710 active code contributors
- 105 supported platform

New Subgroup on Special Topics
- PINS subgroup
- DASH subgroup
- IPSec SAI subgroup
- YANG model subgroup
- Kubernetes subgroup
- Chassis subgroup
- MPLS subgroup
- SONIC application subgroup
SONiC DASH - Disaggregated APIs for SONiC Hosts

- Innovation to deliver enterprise network performance to critical cloud applications
- Extending SONiC APIs to programmable smart devices
- Enable a broad hardware ecosystem to support SDN acceleration
- **Limitless networking** - 100x connections/sec over software implementations
- 1st version of DASH APIs published for VNET scenario
- Open participation ecosystem for every organization and person on the planet

![SONiC-DASH](https://github.com/Azure/DASH)
PINS – P4Runtime Based SDN Stack

- P4 integrated network stack in SONiC
- Support new scenarios with programmable data-plane
- Packet process on your needs through P4RT control plane
- Flexible adoption with opt-in mode
Dual ToR – Carrier Grade Network Reliability

Traditional Way

Smart Cable for Dual ToR

Open Possibilities.
SONiC & SAI Test Enhancement

- Doubled number of test cases comparing to year 2020
- Diversified test infrastructure: Pytest, SpyTest, SNAPPI
- Extended test coverage to dual ToR, Chassis, RDMA, ANVL, SAI
- Fully automated nightly tests on master branch to keep high quality bar
SONiC App Store Coming Soon

- More granular way for SONiC community to contribute
- Common place to host SONiC compatible apps
- Common provisioning flow
- Versioning
- Upgrades
SONiC New Feature Highlight

- Modernized SONiC docker management with Kubernetes
- Fine-grained ECMP to allow users to manage traffic flow with fine granularity
- Reliability improvement with SONiC container warm restart
- Disaggregated Chassis support
- IPv6 enhancement with IPv6 link-local, DHCP Relay and BGP unnumbered neighbors
- Programable data plane with P4 Integrated Network Stack (PINS)
- Carrier-grade network reliability with smart cable and dual ToR
- Deliver enterprise network performance to critical cloud applications with SONiC DASH
- Extend VXLAN EVPN to platforms which uses P2MP tunnel based L2 forwarding
- Leaf to VTEP VXLAN Tunnel support through Overlay ECMP
Call SONiC Contributors

- Inviting contributions in all areas
  SONiC/SAI
  Hardware platform
  New features, applications, tests and tools
  Download, test, Deploy!
- Website: https://azure.github.io/SONiC/
- Source code: https://github.com/Azure/SONiC/blob/master/sourcecode.md
- Mailing list: sonicproject@googlegroups.com
Thank you!