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OCP
CHINA DAY

June 25th
2019
Beijing

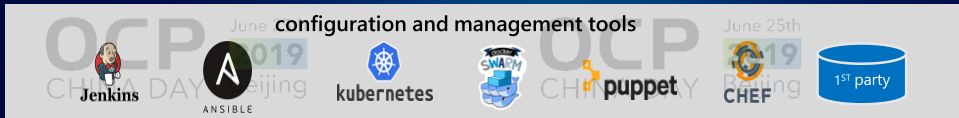
SONiC Enable Fast Evolution of Cloud Networking

Xin Liu | Principal PM @ Microsoft

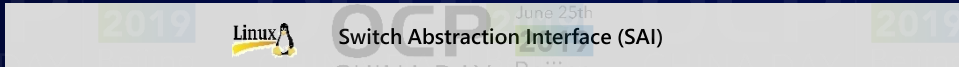
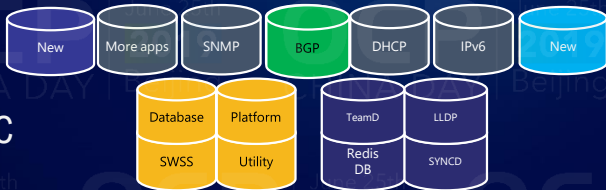
Wei Bai | Researcher @ Microsoft

25th June 2019

Recap: What is SONiC



SONiC



2016

2017

2018

2019

Powering data center ToR/Leaf

Powering bare metal service

Powering AI/gaming service

More contributors and hardware support

More industry adoption

Commercial support

- Linux
- Basic L2/L3
- Containerized
- Redis DB

- RDMA/QoS
- IPv6
- Mgmt. via Swarm
- Fast Reboot(<30s)

- Streaming Telemetry
- Config DB
- Support Virtualization
- Warm Reboot (<1s)

- Richer Features
- Advanced Mgmt
- Stringent Tests
- Development Tools

- 40G
- ASIC
- BRCM: Trident 2
- MLNX: Spectrum
- Cavium: Xpliant
- Centec: Goldengate
- 5 platforms

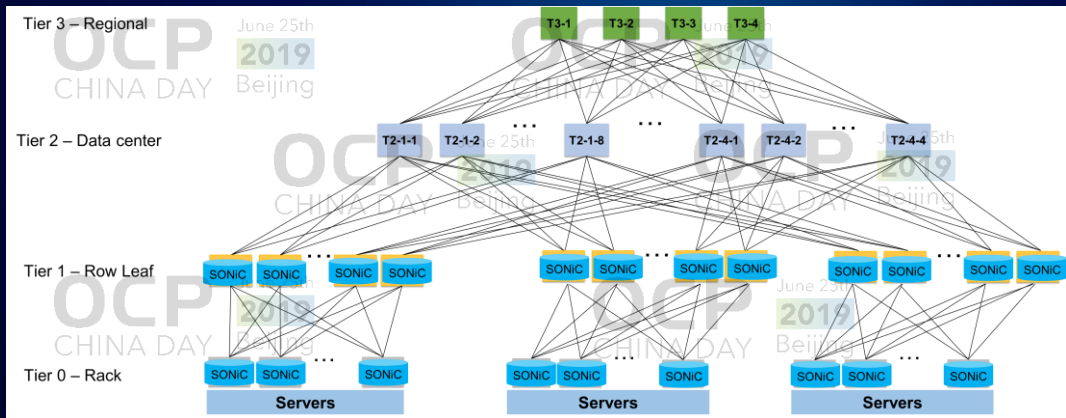
- 100G
- ASIC
- BRCM: Tomahawk/
- Tomahawk2
- Marvell: Prestera
- Barefoot: Tofino
- 16 platforms

- ARM based
- Lower end
- ASIC
- Nephos: Taurus
- BRCM: TD2/TH3, Helix4
- Cisco: Lacrosse
- 31 platforms

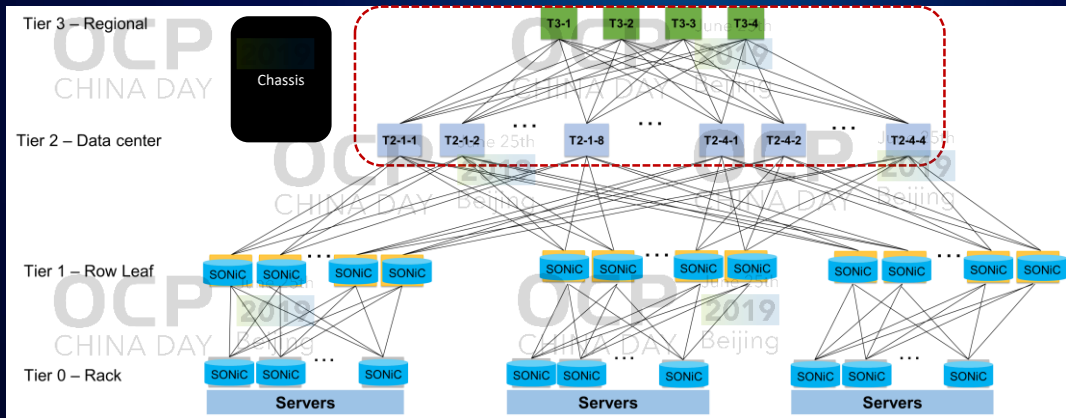
- Chassis Support
- ASIC
- BRCM: DNX
- Innovium: Teralynx
- Marvell: Falcon
- MLNX: Spectrum II
- 69 platforms

SONiC Support for Disaggregated Chassis

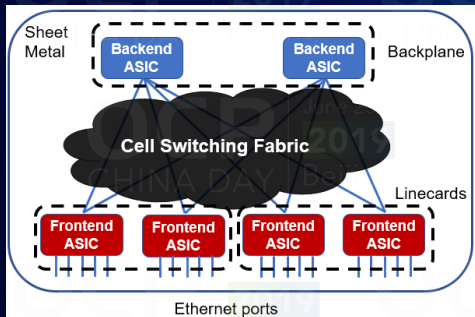
SONiC Is Powering Microsoft At Cloud Scale



Enabling SONiC Beyond Tier 1?

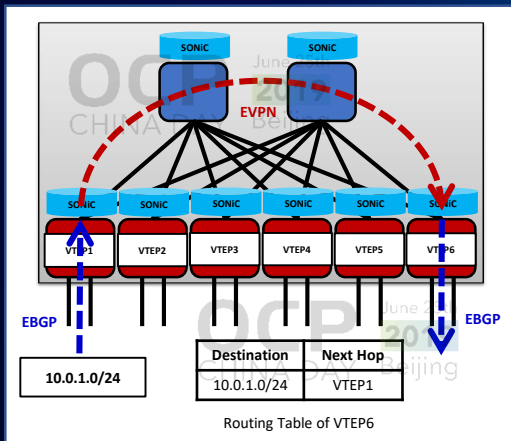


Chassis – the Challenges



- + Power efficiency
- + Port density
- + Low table scale on backend ASICs
- No standard topology/connectivity
- Proprietary ports/packet format
- Proprietary switching/load balancing

SONiC Support for Disaggregated Chassis



- CLOS Topology with Ethernet ports
- Routing: BGP-EVPN
 - One SONiC/BGP instance per ASIC
 - Frontend SONiC *directly* redistribute routes using EVPN
- Forwarding: VXLAN-based switching
 - Each frontend chip is a VXLAN Tunnel End Point (VTEP)
 - Packets inside the chassis are encapsulated with VXLAN headers

Growing Ecosystem



Newly Joined Members since Last Year

JUNIPER
NETWORKS

Ruijie
Networks

MITAC

ALPHA Networks

Baidu 百度

DiDi

JDCloud

Asterfusion

香港科技大學
THE HONG KONG
UNIVERSITY OF SCIENCE
AND TECHNOLOGY

AVIZ criteo

wipro

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Open Invitation

- 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/gh-pages/sourcecode.md>

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Thank you

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