Announcing a Hardware-Software Co-design Strategy

April 14, 2022
What is being Announced Today

• A New Hardware–Software Co-design Strategy
  - Maximize device performance and efficiency with software tuning
  - Speed time to market with hardware and software engineer collaboration
  - Open software enables re-use reducing harmful environmental impact

• New Contribution to OCP by Microsoft and Intel: Scalable I/O (input/output) Virtualization
  - Hardware and software architecture for mass-scale virtualization of I/O
  - OCP catalyst for expanded acceptance and faster evolution
  - Expected to spark innovation in CPUs, I/O devices and cloud architectures

• New Collaboration with SONiC Project at Linux Foundation
  - SONiC at the Linux Foundation will primarily focus on software components
  - Hardware-dependent portions of SONiC remain with the OCP SAI (Switch Abstract Interface) Project
  - Building on OCP’s hardware-aware and the LF software developer communities
OCP hardware-software co-design strategy
New Contribution to OCP by Microsoft and Intel: SIOV

- OCP catalyst for expanded acceptance and faster evolution
- Designed for modern cloud native software
- Scalable to 100’s and 1,000’s of VMs or containers
- Cost and complexity of scaling removed from the device
- Supports both direct device and virtual device connect
- An evolution over SR-IOV removing scaling limitation
- Device resources shared dynamically based upon load
- SIOV can support live device migration

Example Implementations
New Collaboration with SONiC Project at Linux Foundation

• SONiC software components move to Linux Foundation
• SONiC gains access to a larger developer community
• Collaboration with OCP continues around OCP’s SAI Project
• OCP benefits from larger acceptance of SONiC creating pull for OCP-recognized hardware
• Expanded adoption of SONiC will open new market verticals for OCP-recognized switching hardware
• SONiC is the OS of choice for many hyperscale data center operators.
• Other market segments which OCP wants to serve need specialized features not included in SONiC
• OCP with SAI want to enable the market to choose the switch OS best suited to its use cases
What does this mean for SONiC

• SONiC project calls will move to Linux Foundation
  – OCP Website SONiC Page will be updated to indicate SONiC OS layers that are abstracted from hardware by SAI are part of Linux Foundation

• SONiC test program outcome is still to be determined
  – Potential collaboration on test of SONiC on OCP recognized switches

• SAI remains at OCP with same participation from Microsoft
  – OCP will look to increase investment in SAI as this is aligned with its hardware-software co-design strategy

• Other OCP Networking subprojects unaffected