开放网络

Q4, 2016

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开放网络特性与优势

灵活/可控/创新

特性:

开放式硬件: 标准化配置, **Bare-Metal**, **White-Box**, **Brite-Box** 开放设计

开放式软件: 开放接口的开源代码与商用软件

软件控制架构: SDN, NFV, 自动化, 分析与编配

好处:

分离式设计提供更多**选择**，同时去除绑定。

透过开放式软件平台，在网络基础架构中提供优秀的**控制**能力。

通过社区与开发者联盟实现快速**创新**。

全面**自动化**部署满足业务需求 （使用配置，管理和监控等工具）

.....同时.....有效降低投资与运维成本

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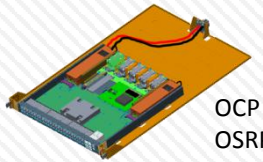
Initiative and Contribution to OCP

- ✓ 10G 48x10G, 6x40G TOR Switch — First OCP-approved switch
- ✓ 40G 32x40G TOR, Spine Switch — Cost Optimized 40G Design
- ✓ 40G 16x40G Wedge TOR Switch — Facebook Design, Edgecore Mfg
- ✓ 100G 32x100G TOR, Spine Switch — First Open 100G Design
- ✓ 100G 32x100G TOR, Spine Switch — First Open 100G Design
- ✓ Open Rack Switch Adapter — Install 19” switches in 21” Open Rack
- ✓ Charter member UNH-IOL Open Networking Test Services Consortium
- ✓ ONIE & ONL on all Accton/Edgecore open switches



OCP
OSRP 1RU

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Commercial NOS Choices for Open Networks

- **Cumulus Networks** *Cumulus Linux*
  - Linux NOS at web-scale with configuration, provisioning & monitoring tools
- **Big Switch Networks** *SwitchLight*
  - Big Monitoring Fabric and Big Cloud Fabric via centralized controller
- **Pica8** *PicOS*
  - Hybrid Networking: OpenFlow agent, with native L2 and L3 features
- **IP Infusion** *OcNOS*
  - Full function L2 and L3, with MPLS, Carrier Ethernet. OAM and telecom features
- **Pluribus Networks** *NetVisor*
  - Full Function L2 and L3, with data analytics, service chaining and VNF functions
- **Canonical** *Snappy Ubuntu Core*
  - Ubuntu OS with NOS, VNF, and MaaS Snaps

Open Software: Open Source Networking Software

- **OpenSwitch**
  - Full function, open-source NOS
  - Introduced October 2015 by HP, Accton, Arista, Broadcom, Intel, Qosmos, VMware
- **Open Network Linux**
  - OCP reference OS for switches
  - Forwarding Agents: OF-DPA & Indigo OF Agent, SAI, OpenNSL, FBOSS Agent, Quagga Routing
- **Open Network Foundation Atrium SDN Distribution (CORD use case)**
  - OpenFlow physical (ONL with OF-DPA) and virtual switches
  - ONOS open-source OpenFlow controller, with BGP application based on Quagga
- **OCP**
  - ONIE: Universal NOS Loader
  - Switch Abstraction Interface (SAI): standard HAL for silicon from multiple vendors
  - Open Optical Monitoring API
- **Software for Open Networking in the Cloud**
  - Network OS components, including full function L3 routing
  - Contributed by Microsoft and co-contributors to OCP

SONiC

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Technology Drivers for Switches

- 100G Ramp: Increased Radix 100G Switches
  - 64x100G Silicon sampling in 2016
  - 2U: 64 x 100G Switches with standard QSFP28 pluggables
  - 1U: 64 x 100G or 32 x 200G with emerging connectors
- 400G Ethernet
  - Technology development 2017, first deployments 2018
  - 32 x 400G switches
- Integration of optical technologies with switches for service provider networks and DC interconnect
  - Coherent optics, CWDM transceivers, DWDM components

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Barefoot Montara and Mavericks

- Chipset: Barefoot Tofino
- Montara: 100G x 32 1U
- Mavericks: 100G x 64 2U Dual switch board design with mezzanine card
- Facebook Wedge form factor
- x86 CPU Module options
- Sample availability: Q4 2016

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开放机架式平台

Highest Capacity, Open Network Platform in the Industry

Cost-Optimized DC Spine, DC Core, and Telecom applications

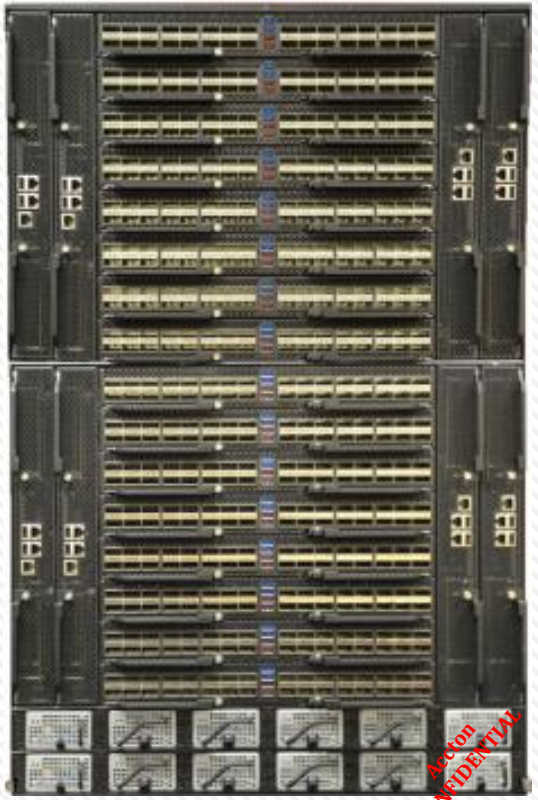
Contributed to OCP to foster community developments…..

OMP 800

- **25.6 Tbps System**
- **10U**
- **19” or 21” Rack Mounting**
- **256 x 100G; 1024 x 25G**
- **8 Line Cards**
- **4 Fabric Cards**

OMP 1600

- **51.2 Tbps System**
- **20U**
- **21” Rack Mounting**
- **512 x 100G; 2048 x 25G**
- **16 Line Cards**
- **8 Fabric Cards**



Thank You