Data Center SDN
ONF SDN Solutions Showcase Theme Demonstrations
Multicore Intelligent NIC (iNIC)

Offloading the evolving virtualized network workload
Freescale – Digital Networking
Global Leader in Embedded Processing Solutions

- **Automotive**
- **Industrial**
- **Networking**
- **Consumer**

**Five Core Product Groups**

**Four Primary Markets**

- Networking
- Consumer
- Automotive
- Industrial

**Broad Portfolio**

**Strong Global Presence**

**Embrace Open Collaboration**

**Secure Data**

**Energy Efficiency**

**Ease of Use**

**700+ Networking Software Engineers**
The Problem: Virtualization Load

The evolving networking software workload consumes revenue generating server resources.

- Hybrid Cloud Mobility
- Cost Reduction
- Rapid Scalability
- Multi-Tenancy
- Disaster Response

SDN Solutions Showcase, October 14-17, 2014
© 2014 Open Networking Foundation
The Solution: iNIC Offloading
Efficient offloading of networking overhead to maximize server revenue generating potential

Freescale VortiQa NFV Acceleration

<table>
<thead>
<tr>
<th>App</th>
<th>App</th>
<th>App</th>
</tr>
</thead>
<tbody>
<tr>
<td>VM</td>
<td>VM</td>
<td>ODP</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Controller*</th>
<th>Controller*</th>
</tr>
</thead>
</table>

VMM Networking

Server

SDN Controller*

iNIC

PCIe SR-IOV (128VFs)

<table>
<thead>
<tr>
<th>Session OF Tables</th>
<th>Switch OF Tables</th>
<th>Transport OF Tables</th>
<th>Security OF Tables</th>
</tr>
</thead>
</table>

VortiQa ON Switch (SDN L2-L7 data plane)

Packet Engine
Virtual Network Overlays

* Controller could be remote
VortiQa Multicore Networking
Scalable NFV / SDN networking solutions from datacenters to customer premise access edge

PCIE-5220
Standard iNIC
T2080 8-vCore SoC
Dual-10G, 128-VMs, ODP/DPDK
Security, DPI, Compression Accel

Niagara 732
High-End iNIC
T4240 24-vCore SoC + C29x
Quad-10G, 128-VMs, ODP/DPDK
Security, DPI, Compression Accel

PE2SFC293/A
PK Accelerator
C29x Crypto Co-Processor
32PKs/sec (2K keys, up to 4K)
RSA/DSA, Diffie-Hellman, Elliptic

ESP-9112
ToR SDN Switch
T4240 24-vCore SoC + Trident-2
L4-L7 service deployment platform
Security, DPI, Compression Accel

ToR SDN Switch
IoT Gateway
vCPE

Install Once, Update Many
software delivered services
Scalable from datacenter to customer premise access
Branded, White Box, Bare Metal

Hear about Edgewater Networks
vCPE in Campus SDN Theme
QorIQ T4 / T2 + VortiQa
A Flexible Multicore NFV / SDN Processing Platform

Efficient Performance per Watt
Multicore SoC Processors
- 8 to 24-vCore scalability
- Offload engines for security, DPI, compression and packet processing
- Strong virtualization technology

QorIQ Layerscape
- ARM architecture support
- C-programmable NPU accelerator optimized for OpenFlow execution
- “Ease of Use” resource management

Open Networking (ON) Software
- OpenFlow w/ L4-L7 extensions
- C-based performant solution
- OpenStack integration

ON Director (SDN controller)
- Controller (released open source)
- Linux Apps pre-integration bindings with self-learning flow management

ON Switch (SDN switch)
- Unconstrained table pipeline
- Multiple virtualized data paths with hardware acceleration
- OVSDB or stand-alone operation

Visit us at Booth #23