

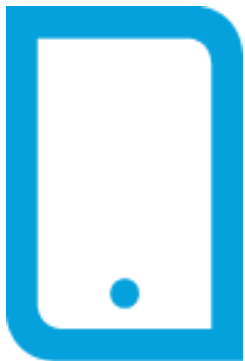
# Session de présentation serveurs, stockage et réseau 5 juin 2013



réseau grenoblois des informaticiens  
administrateurs systèmes & réseaux

Le Réseau Grenoblois  
des Informaticiens  
Administrateurs Système & Réseau

# Agenda



**8h30 : Accueil**

**9h : La vision HP sur le Software Defined Network**

**10h : Entracte gourmande (café, thé, lait, jus de fruits, viennoiseries)**

**10h30 : Comment réduire le poids de vos données ?**

**11h30 : Les dernières générations de serveurs HP x86 (Proliant Gen8, Proactive Insight, « Moonshot »)**

**12h30 : Clôture + Buffet**



# Architect the new enterprise network with SDN

Bruno HARENG, SDN product manager, HPN EMEA

SARI, June 5<sup>th</sup> 2013

# Agenda



1. Introduction to HP Networking
2. Networks are at a breaking point
3. HP SDN architecture
4. OpenFlow
5. SDN Use cases
6. Conclusion

# HP Networking strategy

## Simplification

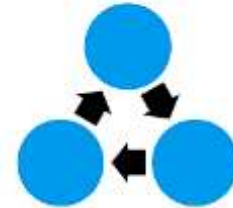
**Product  
Innovations**



**Disruptive  
Economics**



**Superior Business Value**



# 35 years of continuous networking Innovation

1977  
Ethernet patented  
#4063220 by  
3Com founder Bob  
Metcalfe

1977

1987  
HP  
invents  
10Base-T

1990  
HP intros  
10BASE-T  
stackable  
hubs

1993  
HP offers  
lifetime  
warranty

1999  
HP ships  
1000BaseT  
switch

2000

2006  
TippingPoint  
Zero Day  
Initiative

2008  
First Openflow  
switches for research

2011  
HP launches  
FlexNetwork  
Architecture

2012  
HP launches  
VAN and  
announce First  
SDN Solution

Getting Started

Leading the Industry

1982  
3Com shipped first  
Ethernet adapter

1991  
HP and CERN  
demonstrates  
packet sampling

1992  
3Com  
demonstrates  
100Mbps  
Ethernet

1994  
3Com launches  
SuperStack

1998  
3Com intros  
industry's first  
pure SIP PBX

2000  
HP Switch on a chip

2001  
HP drives IEEE  
802.1X standard

2005  
HP drives LLDP & LLDP-  
MED standard

2010  
HP ships 1<sup>st</sup> PoE Plus  
switch

2011  
HP ships 1<sup>st</sup> Energy  
Efficient Ethernet switch

2012  
HP ships  
24 OpenFlow  
Switches



# HP Networking Momentum – a Foundation for Growth

13

Consecutive  
Growth  
Quarters

#1

Smart  
Managed  
Switches

#1

Network  
Vendor in  
China

#2

Network  
Vendor  
Globally

3.2

Points of  
Switch  
Share  
Growth  
over 4yrs



# Earning Customers

Telefonica



Marriott



3M



AMD



Roularta MediaGroup



THE UNIVERSITY of  
NEW MEXICO

KUEHNE+NAGEL

wellcome trust



OmnicomGroup

BMW Group





# Leader and Visionary in Gartner Magic Quadrants

Figure 1. Magic Quadrant for Enterprise LAN (Global)

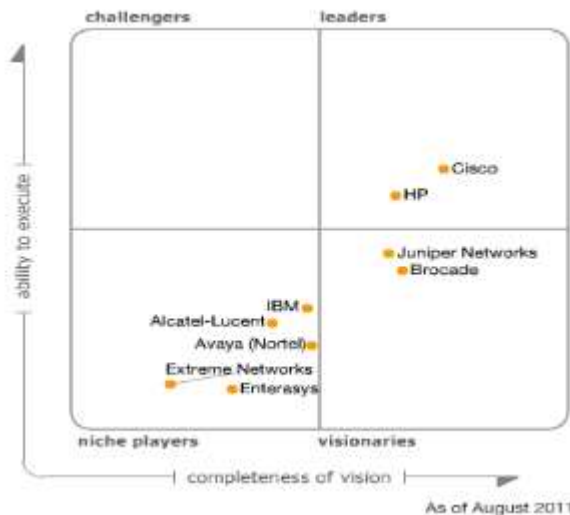
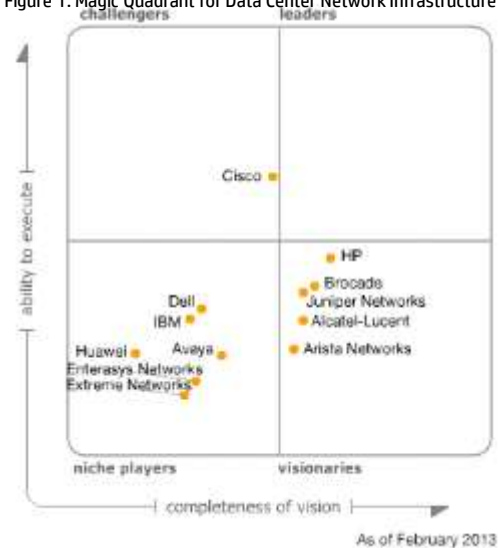


Figure 1. Magic Quadrant for the Wired and Wireless LAN Access Infrastructure



Figure 1. Magic Quadrant for Data Center Network Infrastructure



Leaders in Gartner Magic Quadrant For Enterprise LAN (Global)

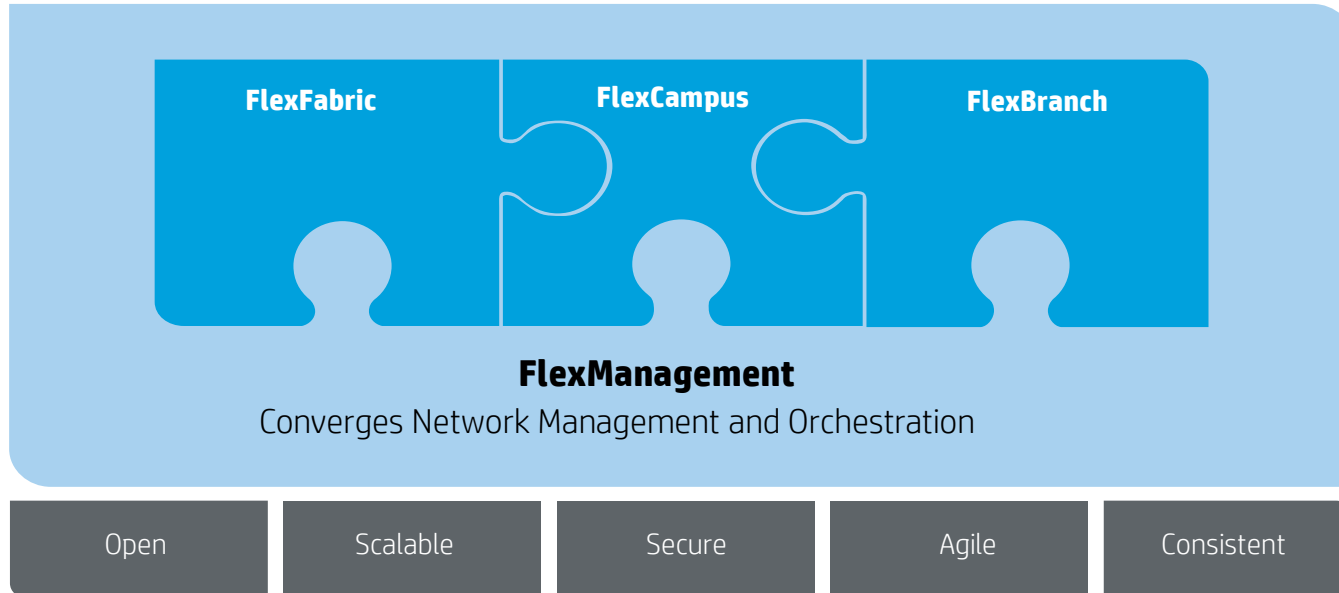
Leaders in Gartner Magic Quadrant For Wired and Wireless LAN Access Infrastructure

Visionary in Gartner Magic Quadrant For Data Center Network Infrastructure

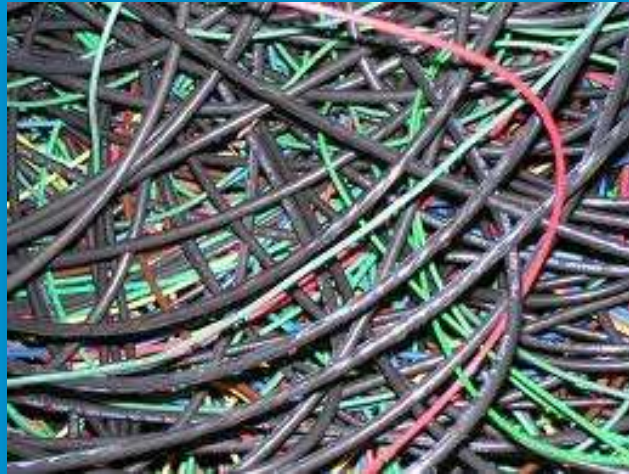


# Simplifying your network

## FlexNetwork Architecture



# Networks are at a breaking point



# Mega trends and network implications

Up to

**70%**

workloads will be virtualized by the end of 2016

Changing traffic patterns

Up to

**10X**

increase in network capacity, new wave of business video apps

Bandwidth explosion

At least

**50 billion**

devices will connect to wireless networks by the year 2020

Consumerization of it

Up to

**3 months**

to deploy new applications across the network

Provisioning complexity



# The Transformed Network Landscape



# The HP enterprise network vision



Focus less on managing  
**infrastructure...**

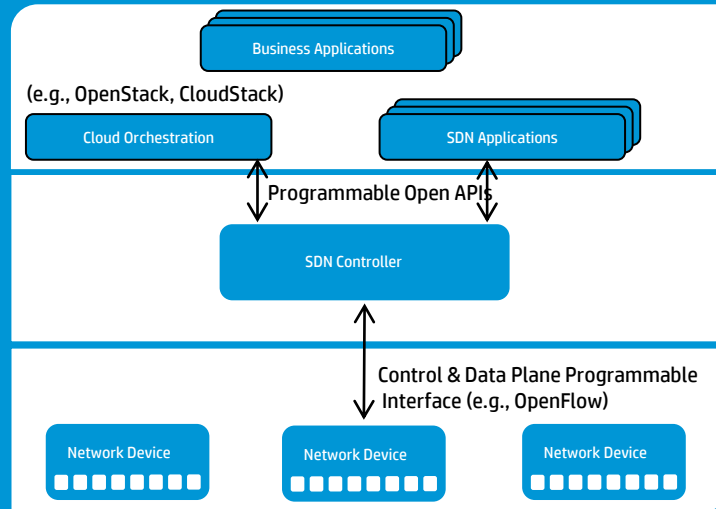


...and more on connecting **users**  
to **applications**



# HP Virtual Application Networks,

## HP SDN architecture



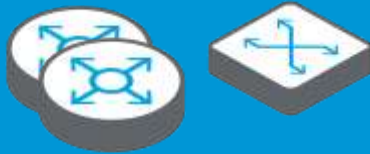
# HP Virtual Application Networks

Deliver the new enterprise network

**Application  
characterization**

**Network abstraction**

**Automated  
orchestration**



**FlexNetwork Architecture**



**Open**

**Scalable**

**Secure**

**Agile**

**Consistent**





# Open Networking Foundation on SDN

**... In the SDN architecture, the control and data planes are decoupled, network intelligence and state are logically centralized and the underlying network infrastructure is abstracted from the applications ...**

Source: [opennetworking.org](http://opennetworking.org)



# ONF



# Time to Rethink Things

## From Traditional Networking to SDN-Enabled

### Networking by Devices



From HW based attributes

#### Apply SDN Principles

- Decouple the 3 planes
- Centralize control
- Optimize the data plane

### Networking by Objects



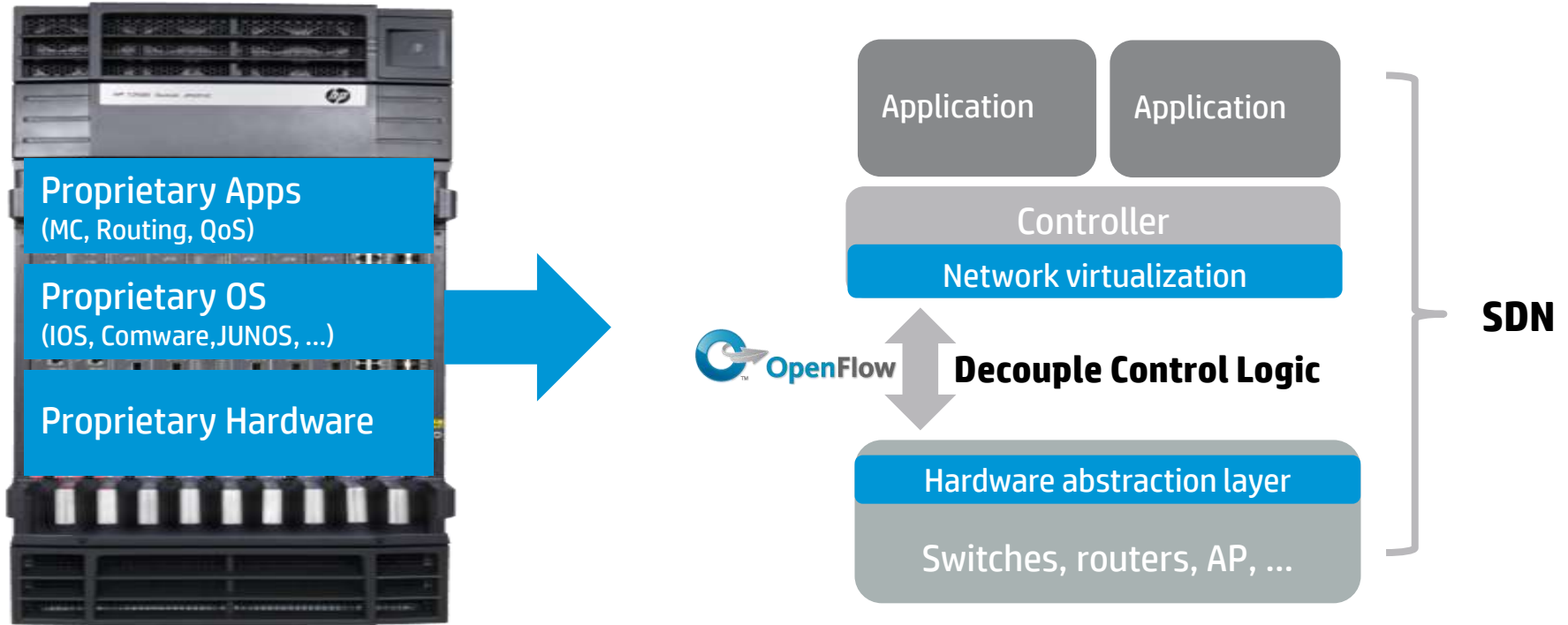
Management Plane

Control Plane

Data Plane

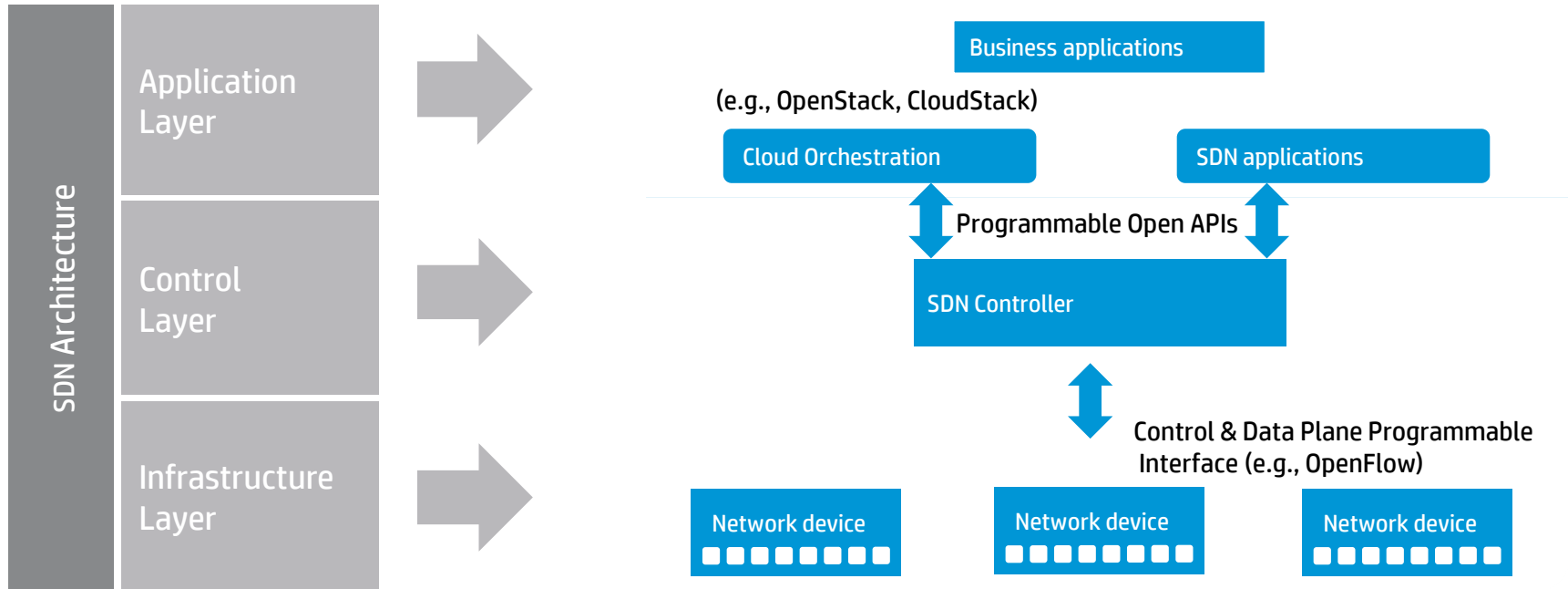
To logical and context-based attributes:  
Applications, User, content sensitivity

# Open Networking Foundation on SDN



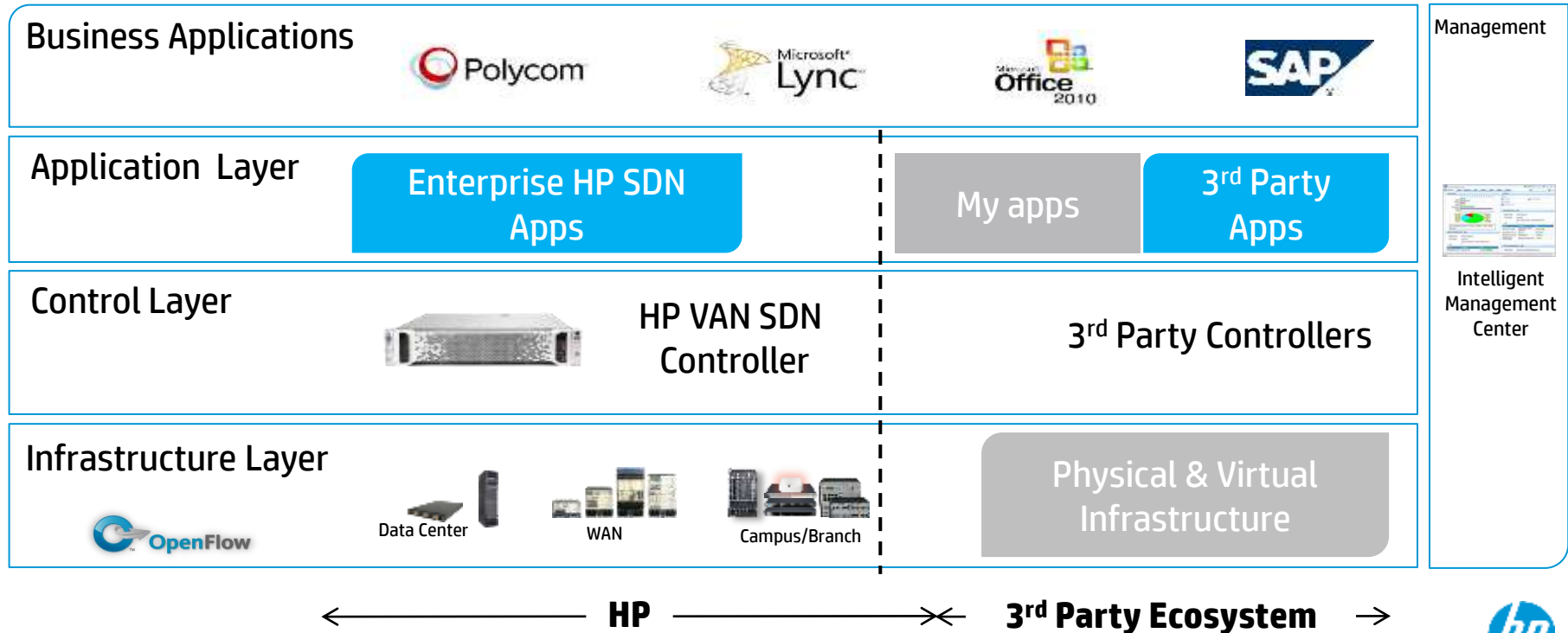
# HP Enterprise SDN Architecture

Ability to Apply Business Logic to Network Behavior in Dynamic Fashion



# HP End-to-end Solution and Ecosystem Vision

## Virtual Application Networks Framework



# HP commitment to software-defined networks

## Software-defined network leadership

**Open Network  
Foundation**

**OpenFlow  
Leadership**

**NFV  
Leadership**

**OpenStack  
Leadership**



# Debunking SDN Myths

A Software-defined Network is Not

**Only Implementing  
Network Functions in  
Software or on  
Virtual Machine**

**Only Programmable  
Proprietary APIs for  
Network Device or  
Management System**

**The End of  
Hardware  
Innovation**





# OpenFlow

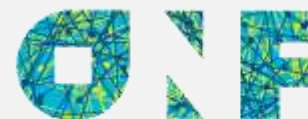


# Leading OpenFlow Collaboration

HP Networking



LABS<sup>hp</sup>



OPEN NETWORKING  
FOUNDATION



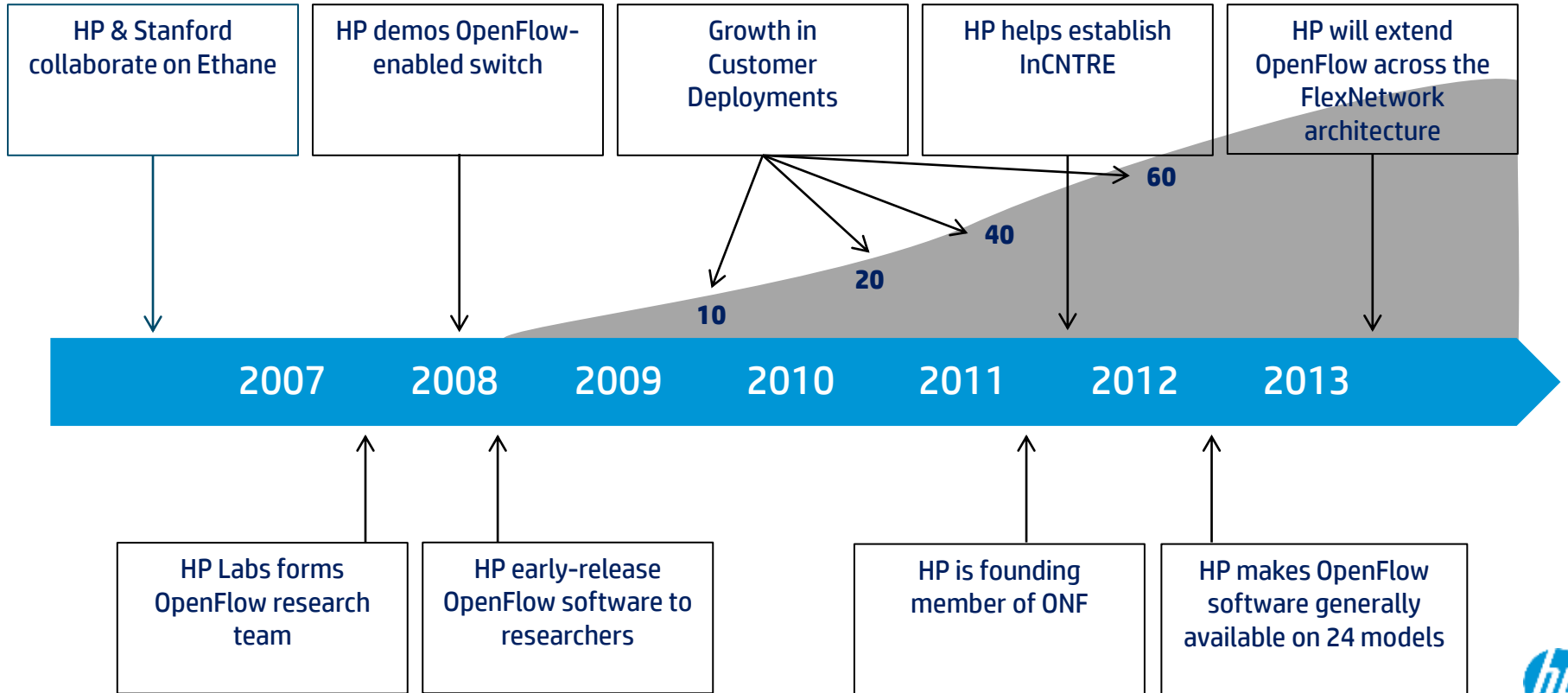
Berkeley  
UNIVERSITY OF CALIFORNIA

**Raytheon**  
BBN Technologies

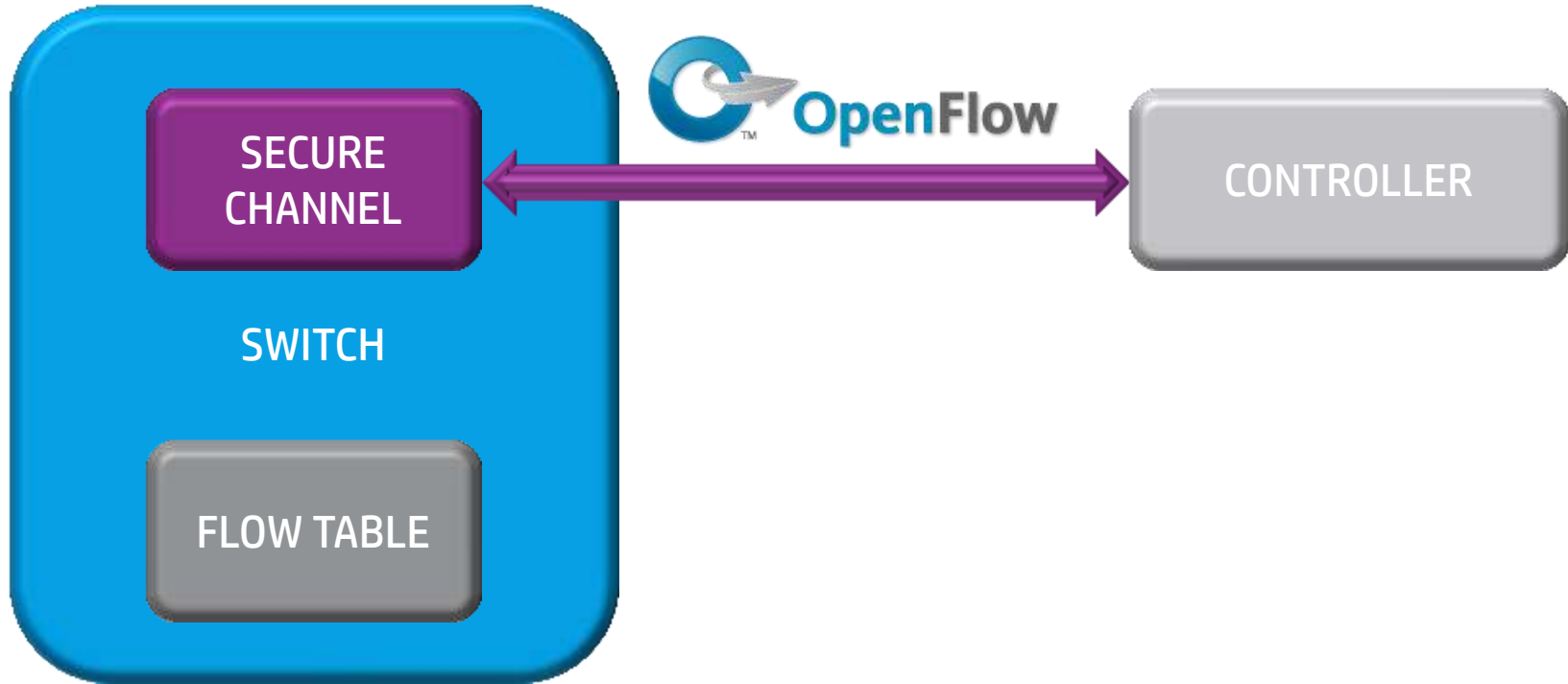
STANFORD  
UNIVERSITY



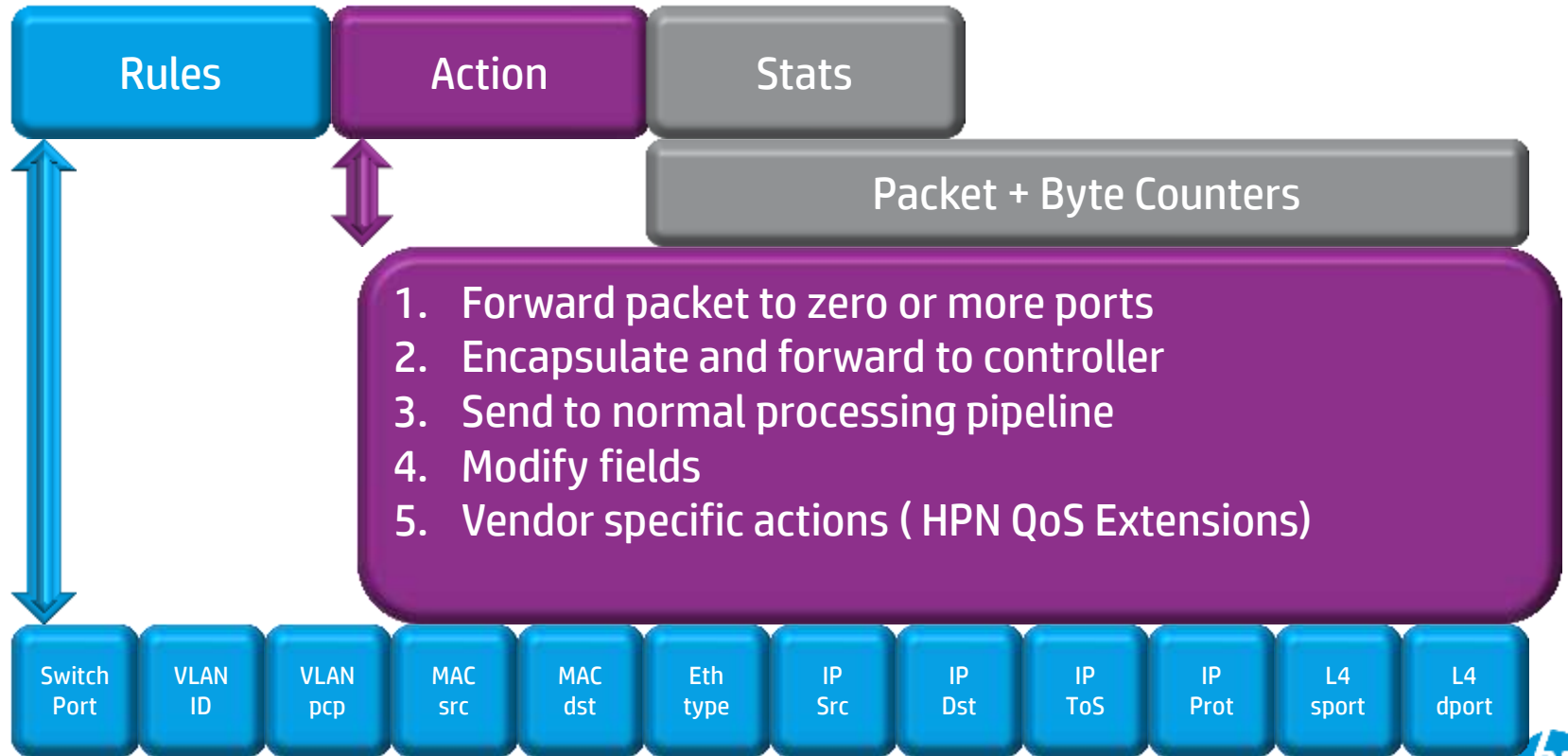
# HP OpenFlow Leadership



# OpenFlow 1.0 Switch



# OpenFlow 1.0 Table



# OpenFlow/SDN applications impact on:

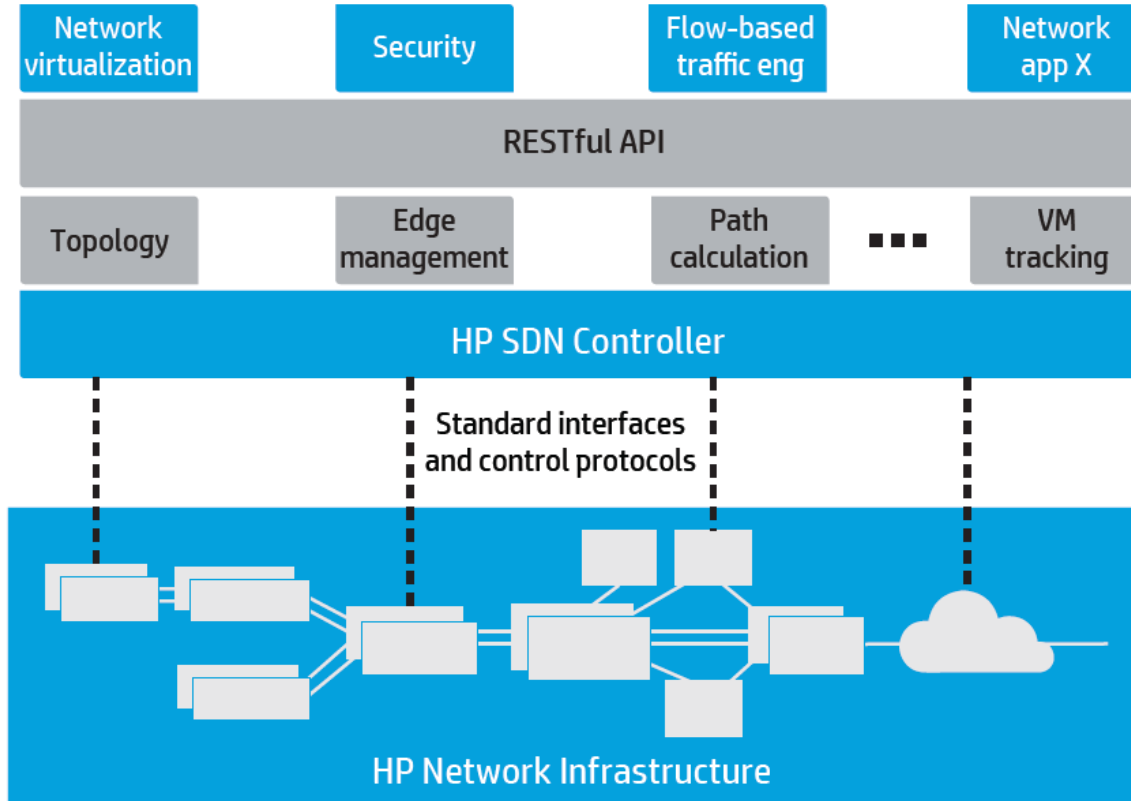
- **Spanning tree**
- **Routing**
- **Multicast**
- **Load balancing**
- **Security – zoning, Anti malware, DDoS**
- **Security - optimized usage of in-line inspection capabilities – DPI , Content Filtering, AV , Sniffer , Sandbox**
- **Performance**
- **Power consumption**
- **And many more....**



# Enterprise SDN Use Cases

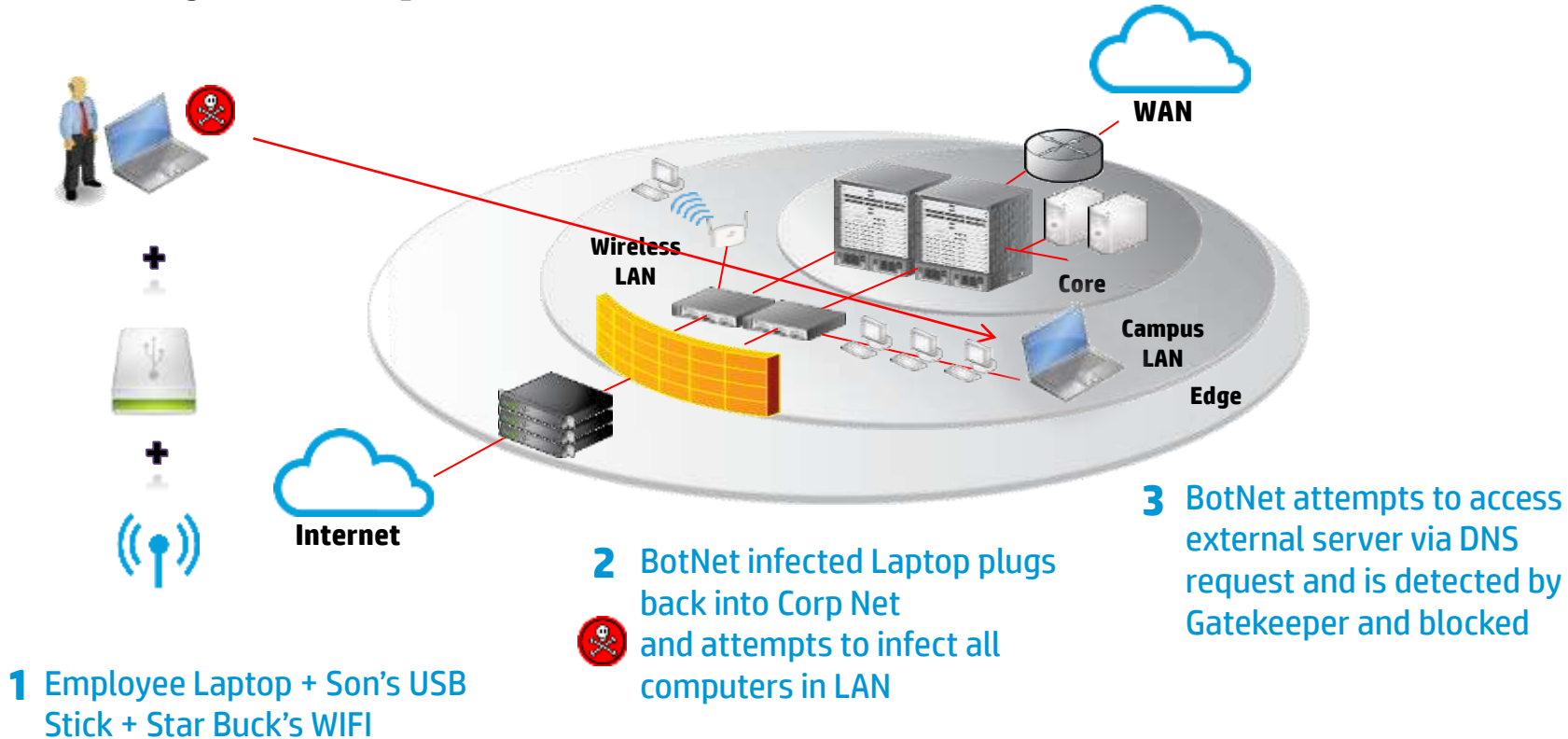


# Enterprise SDN Applications





# Security Example : BYOD malware scenario

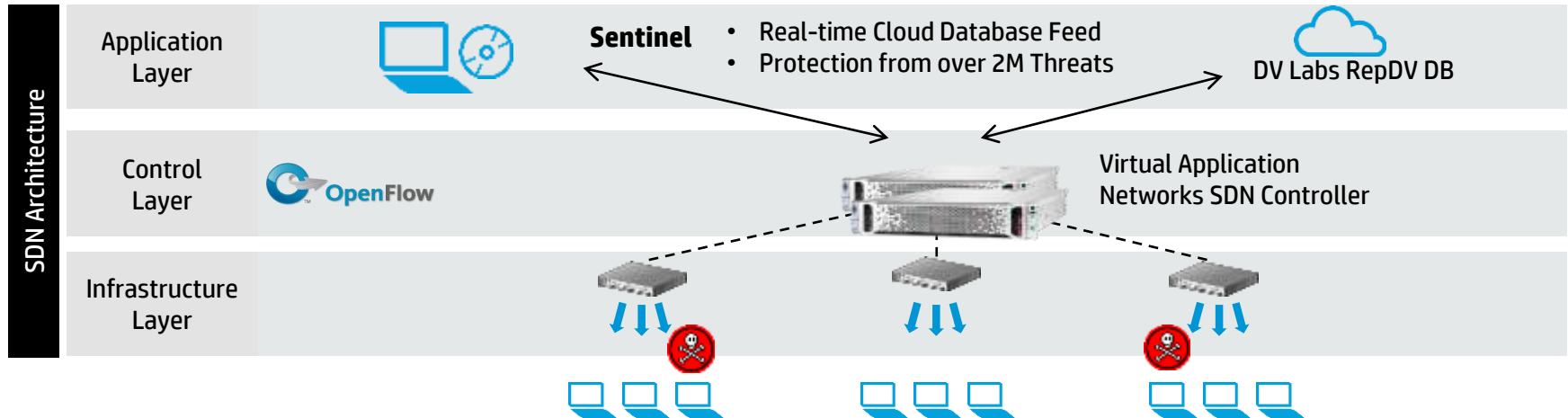


# HBO: Sentinel Security Application Use Case

Campus & Branch Security

Data Center Security

Cloud Security



Scales to Thousands of Endpoints

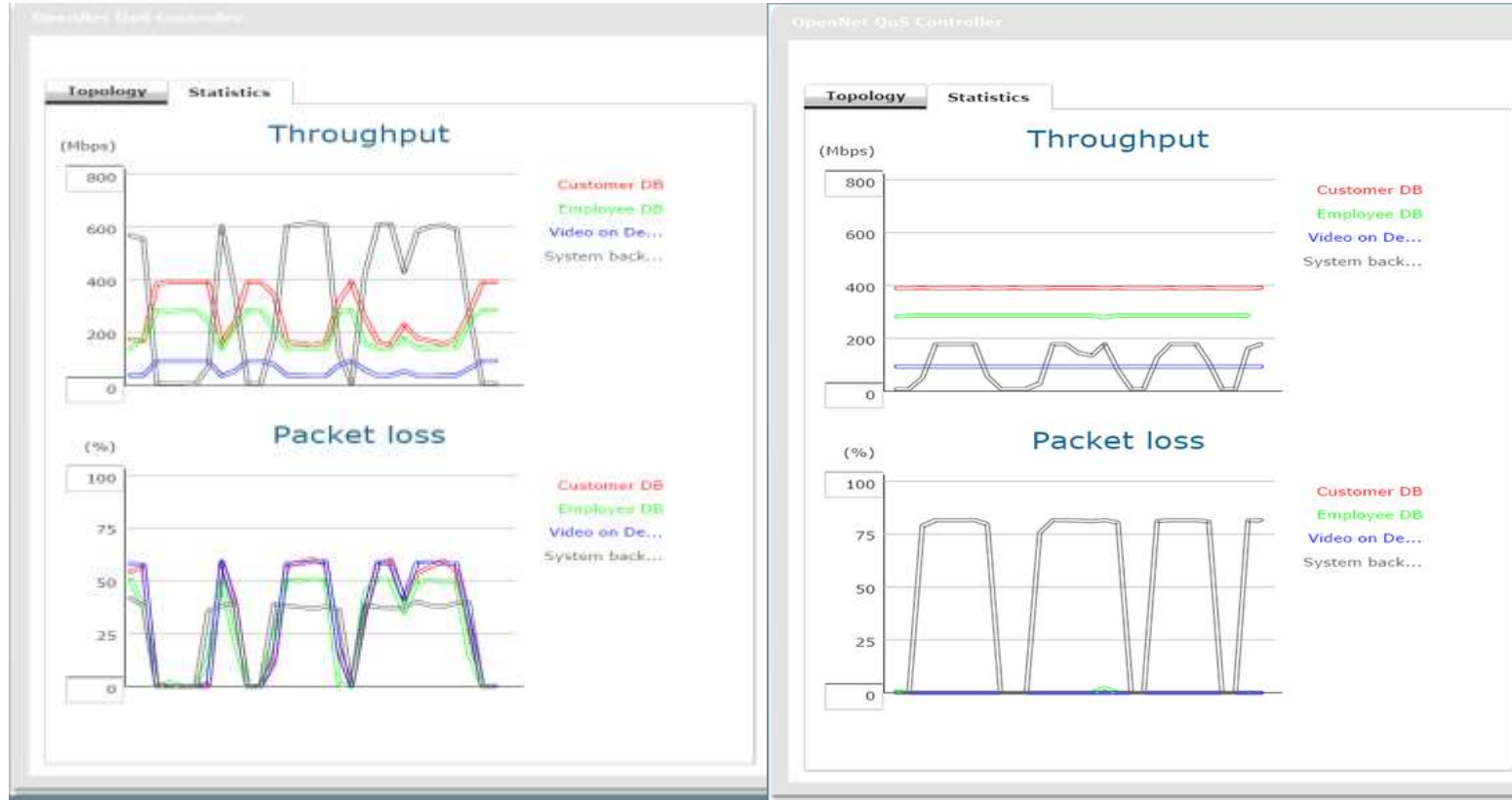
Eliminates Need for Dedicated Appliances

Automates Threat Protection for BYOD

Uses standard-based OpenFlow



# Example : Unified communication – HP Labs



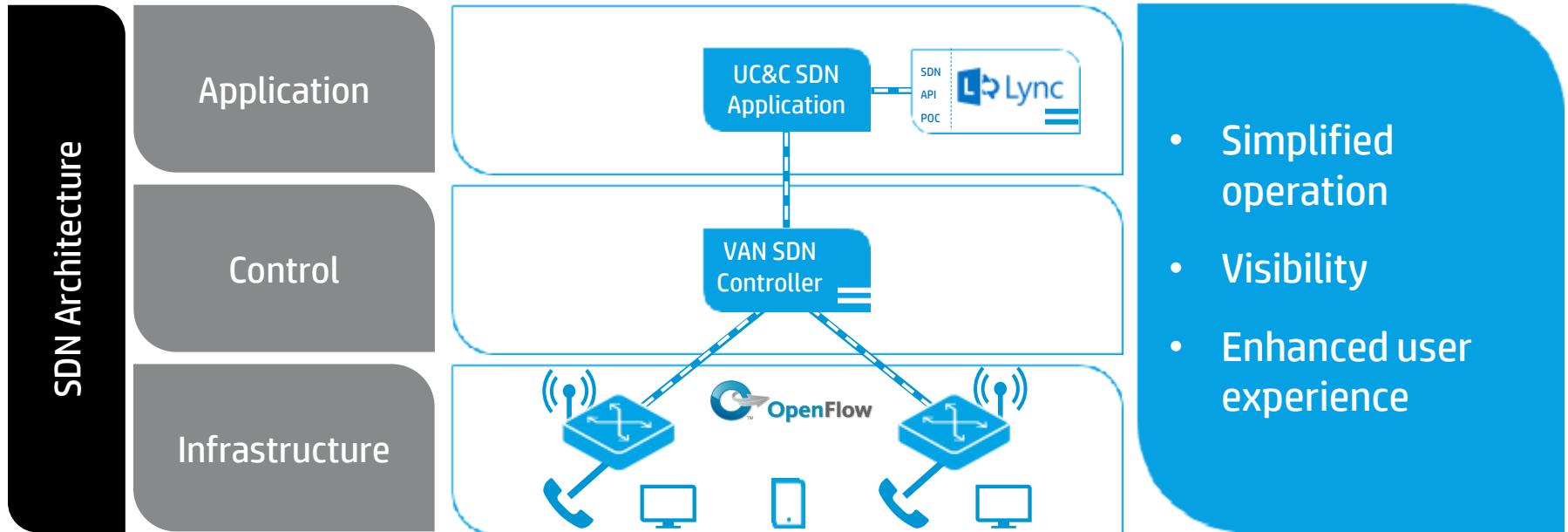
Default

With Openflow



# Example: UC&C SDN application for Lync

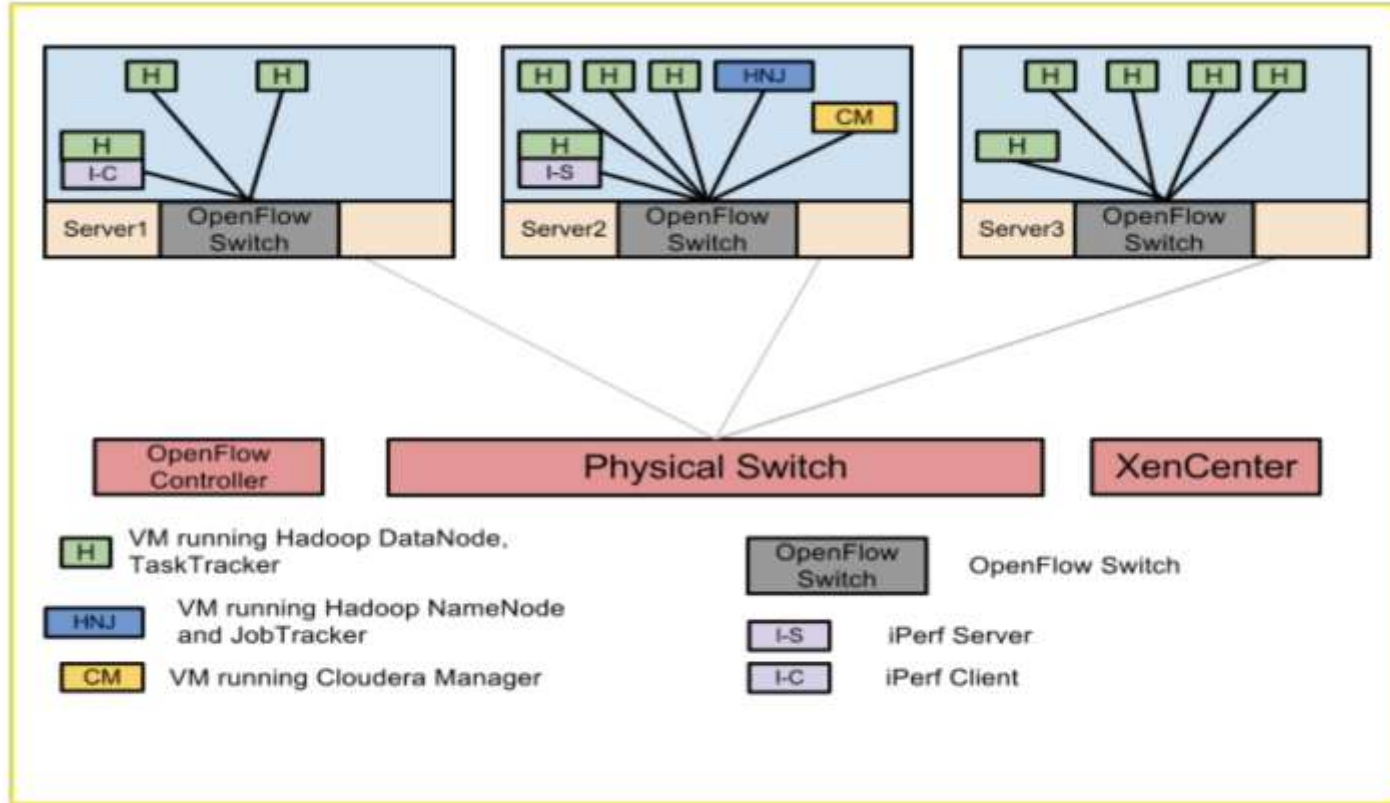
Automating policy for campus enterprise business applications



# UC&C SDN application for Lync Video



# Example - Hadoop – 60% performance increase

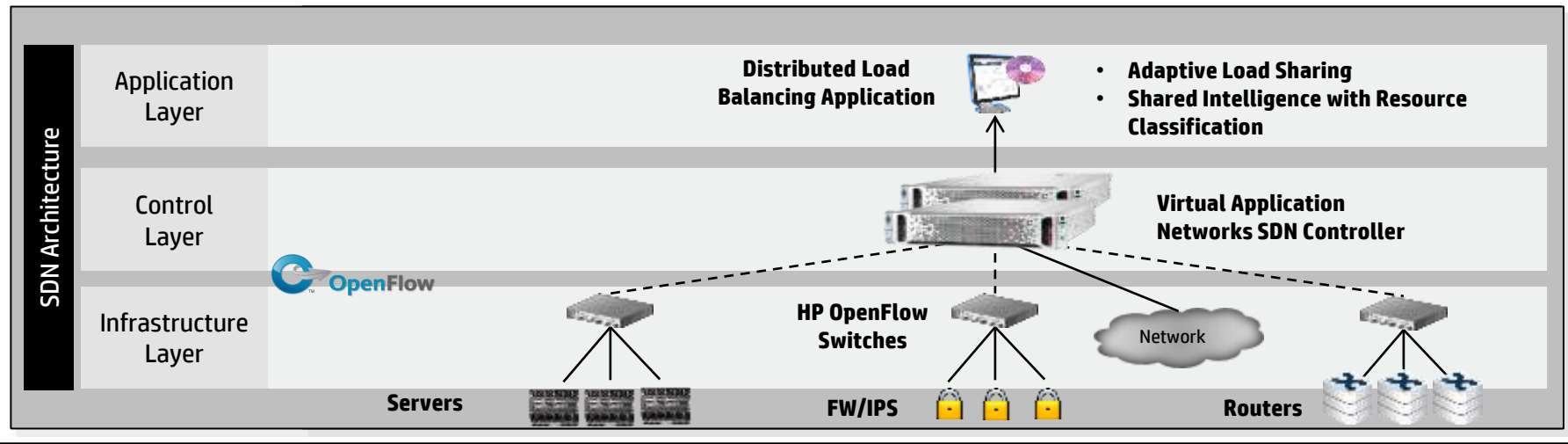


# Example - CERN: Distributed Load Balancing Use Case

Traffic Classification & Load Balancing

Network Resource Scaling  
(Firewall/IPS)

Efficient Multipathing



Extends scalability  
beyond traditional limits

Remove traffic  
bottlenecks

Improved resource  
utilization

Standards-based using  
OpenFlow





# Conclusion



# With HP Virtual Application Networks and SDN

Delivering Applications or news users in Minutes versus Weeks

Tune network to the application and user delivery requirements

Virtualize the network end to end, from application to user

Enable IT to manage the network with policies rather than CLI, scripts

Single pane-of-glass management for the physical and virtual network

Ensure choice with open, standards-based approach



# HP Networking – committed to the SDN journey

**Simplification**

**Established leadership**

**Innovative solutions**

**Long-term vision**



HP IS  
**TRANSFORMING**  
THE NETWORKING INDUSTRY



# To know more on SDN and OpenFlow

**ONF Site: [www.openflow.org](http://www.openflow.org)**

**Research Papers:**

**Video: <http://www.openflow.org/videos/>**

**US research project : GENI**

**EU research project: OFELIA**



# Thank you

