

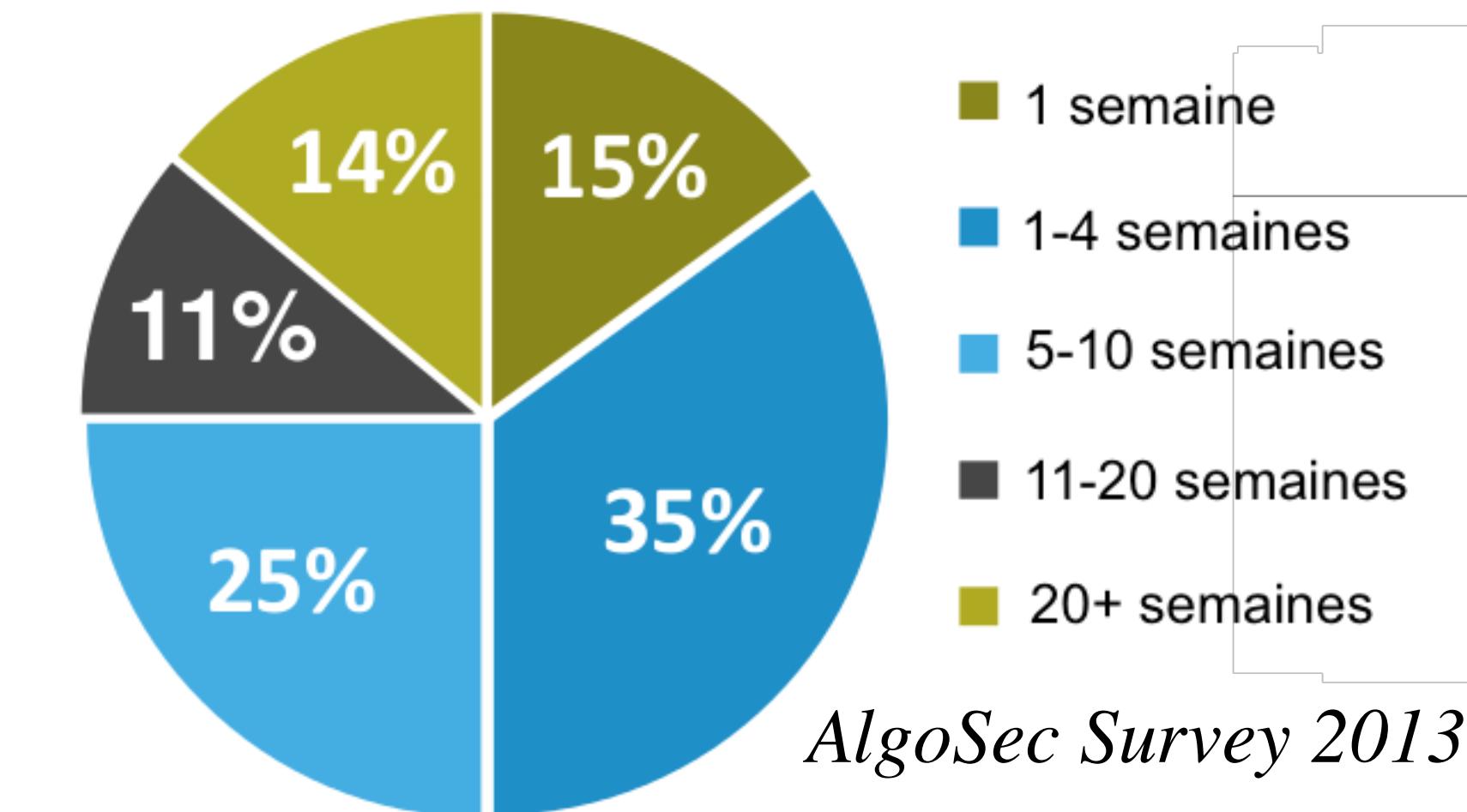
SDN et le passage au Cloud Computing

Un regard sur les aspects réseaux et les apports de SDN dans les data centres

par Cynthia Lopes do Sacramento
Tuteur entreprise : Claude Casery
Tuteur école : Jean-Luc Parouty

Grenoble, 4 Juillet 2014

Temps moyen pour déployer de nouvelles applications dans un data centre



Objectifs/Introduction

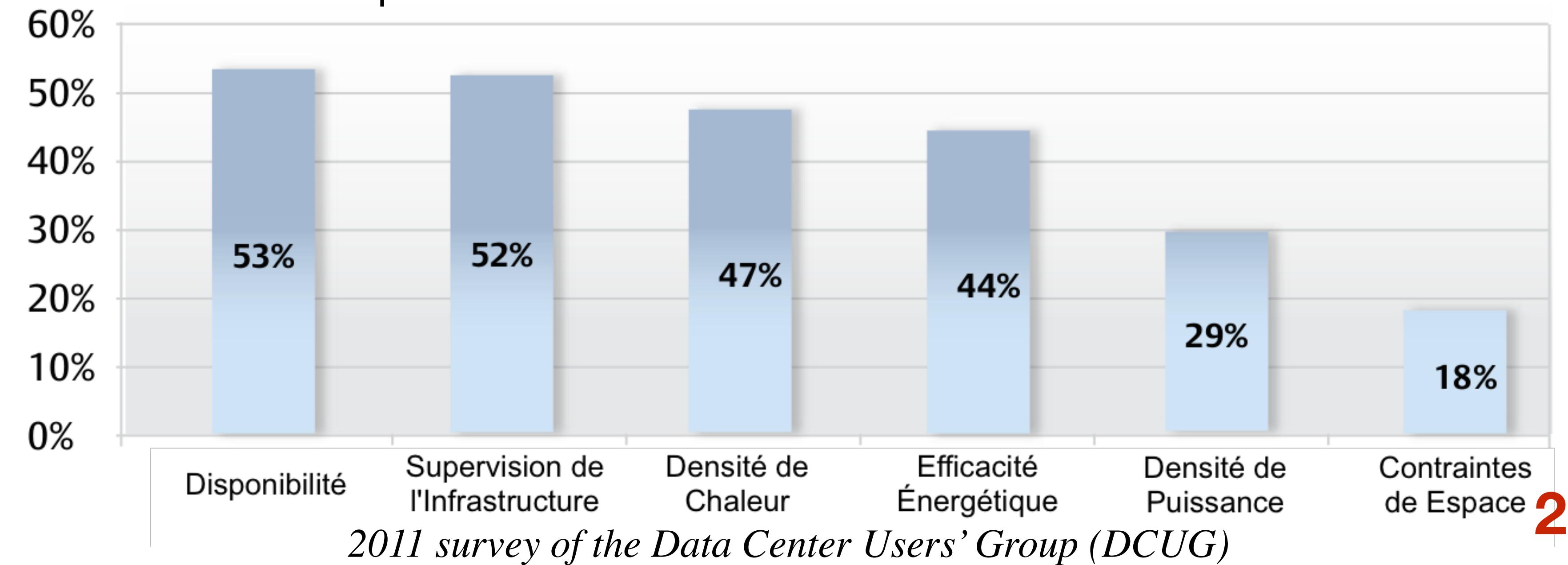
- Data Centres
 - Croissance des données
 - Besoins variables

► Cloud Computing

- Réseaux
 - Complexité
 - Agilité et Sécurité

► SDN

Défis pour l'Infrastructure Data Centre 2011



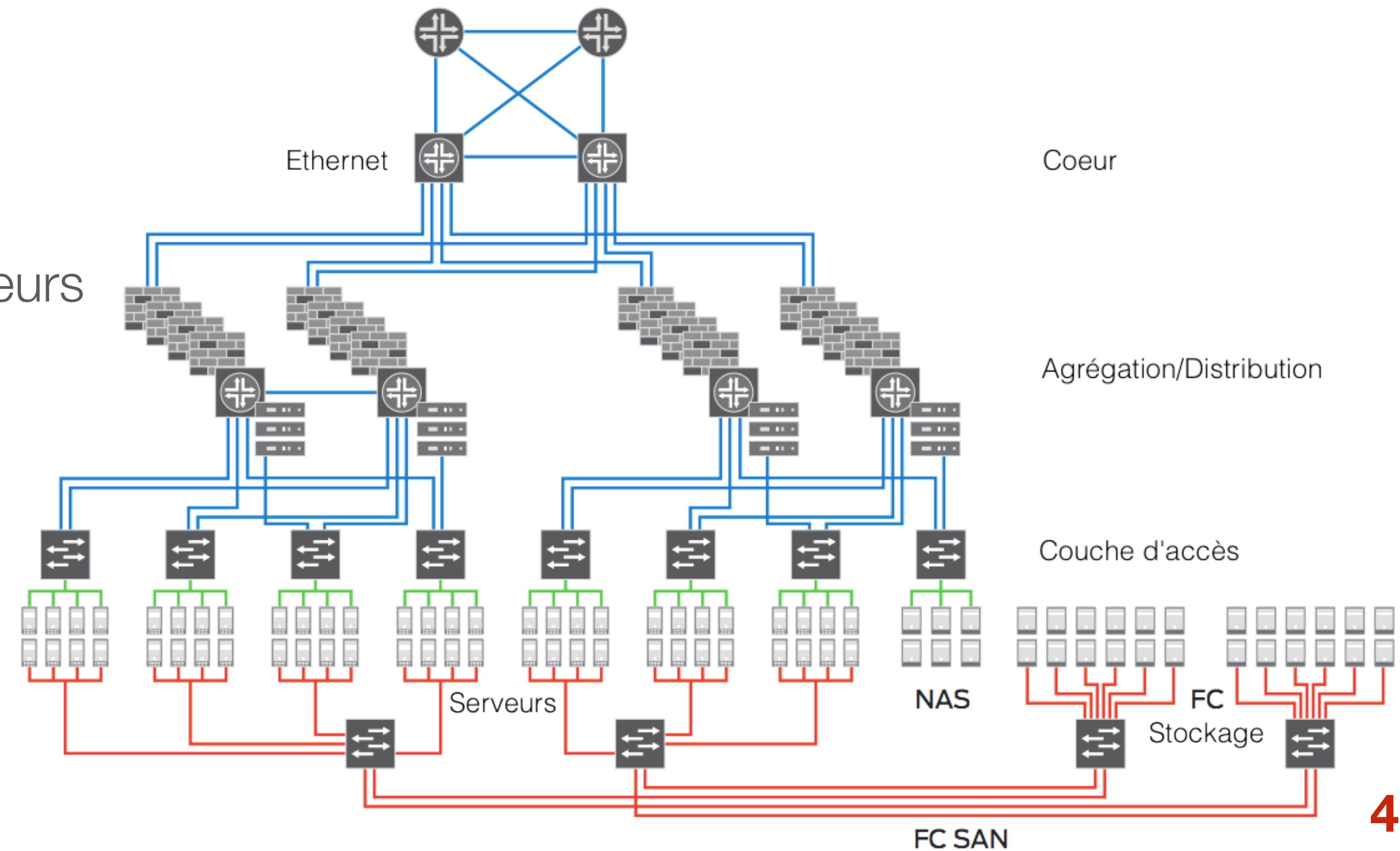
Sommaire

- Architecture réseau de référence
- Approche SDN
- Études des cas
 - Traditionnel et SDN
- Conclusion

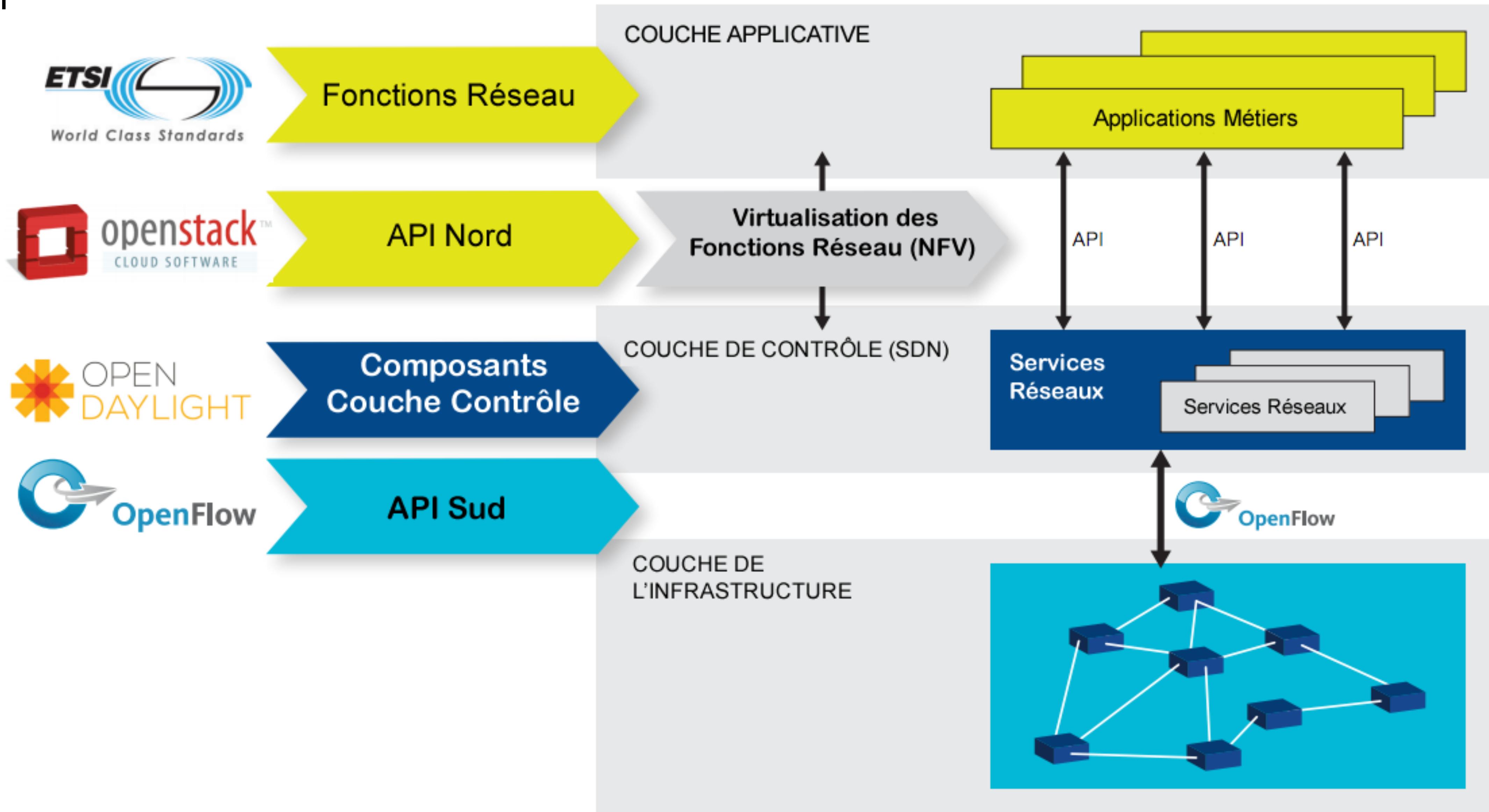


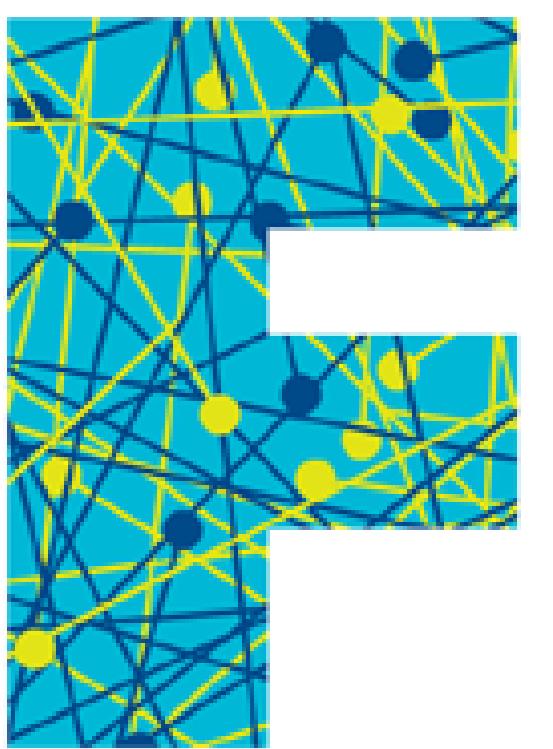
Architecture réseau de référence

- Complexité
- Performance
- Blocage des vendeurs
- Évolution difficile
- Agilité
- Sécurité



Approche SDN





OPEN NETWORKING
FOUNDATION



Études de cas

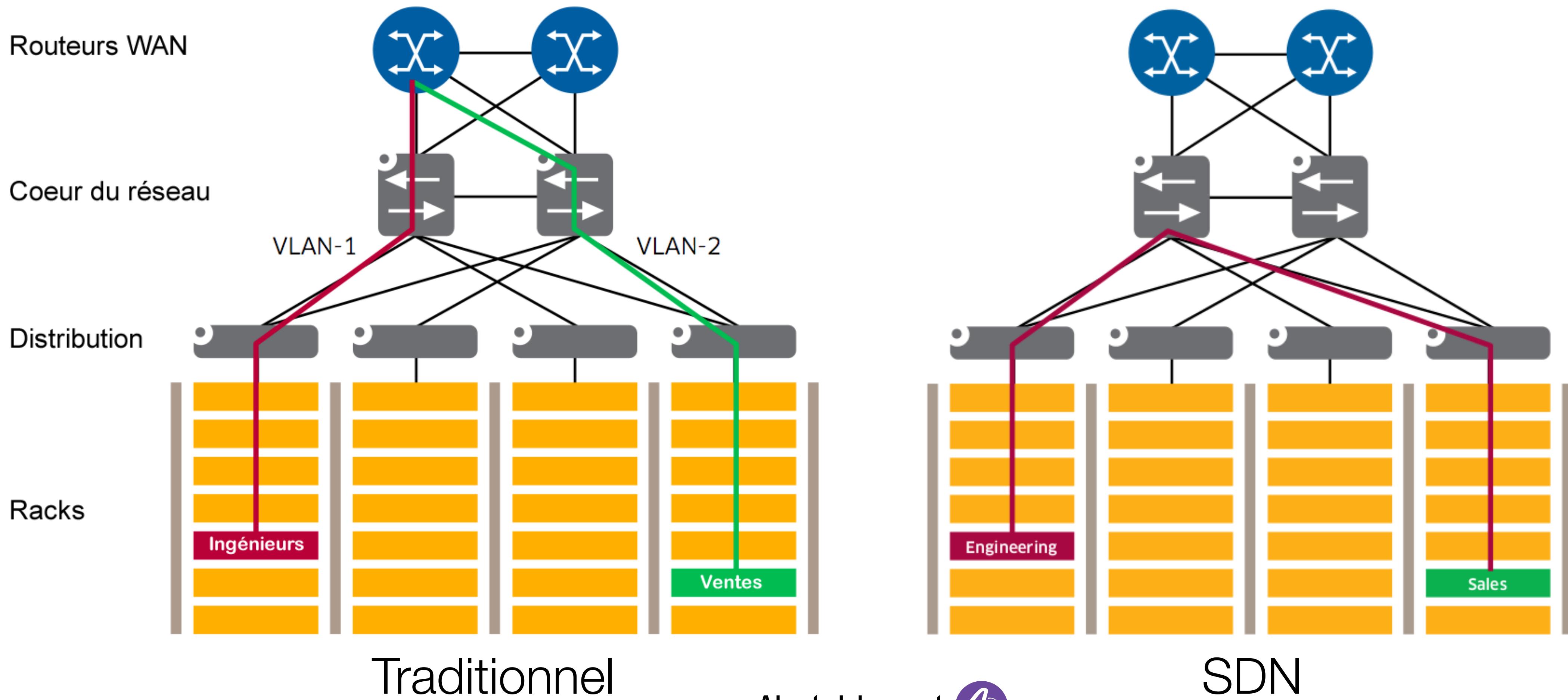
- Réseaux Multi-Tenants
- Interconnexion WAN
- Supervision
- NFV/IaaS

Alcatel • Lucent

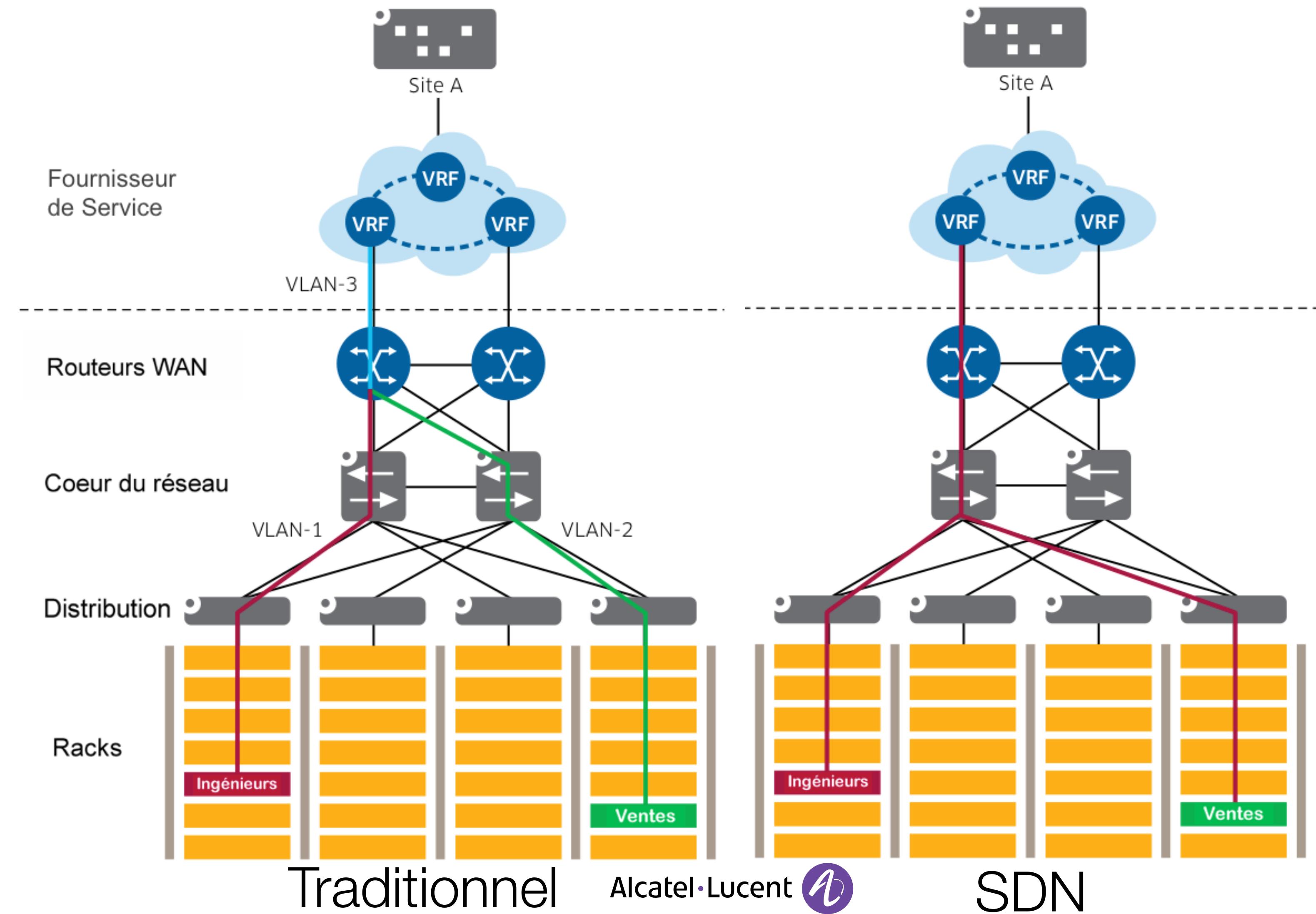


big switch
networks

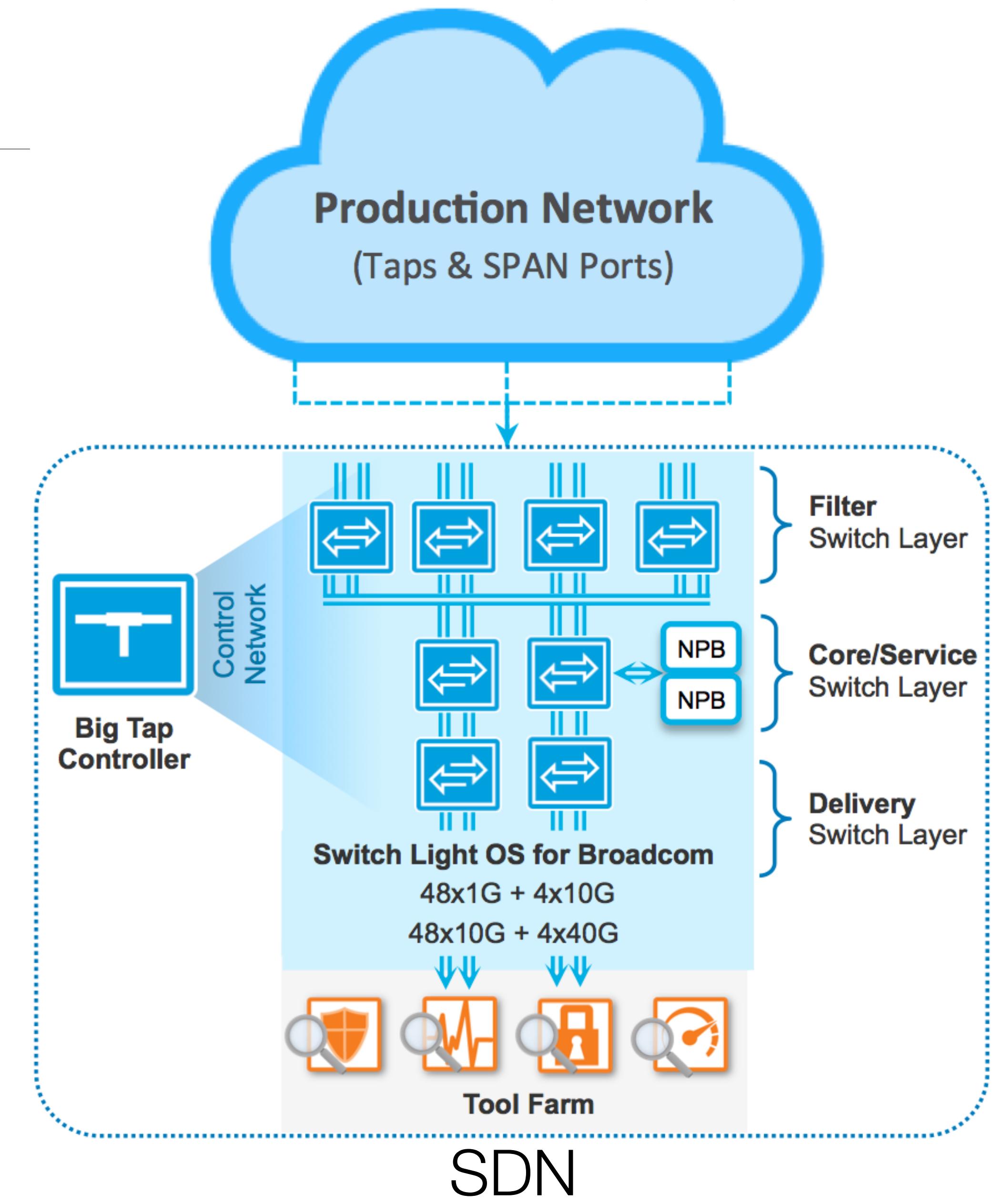
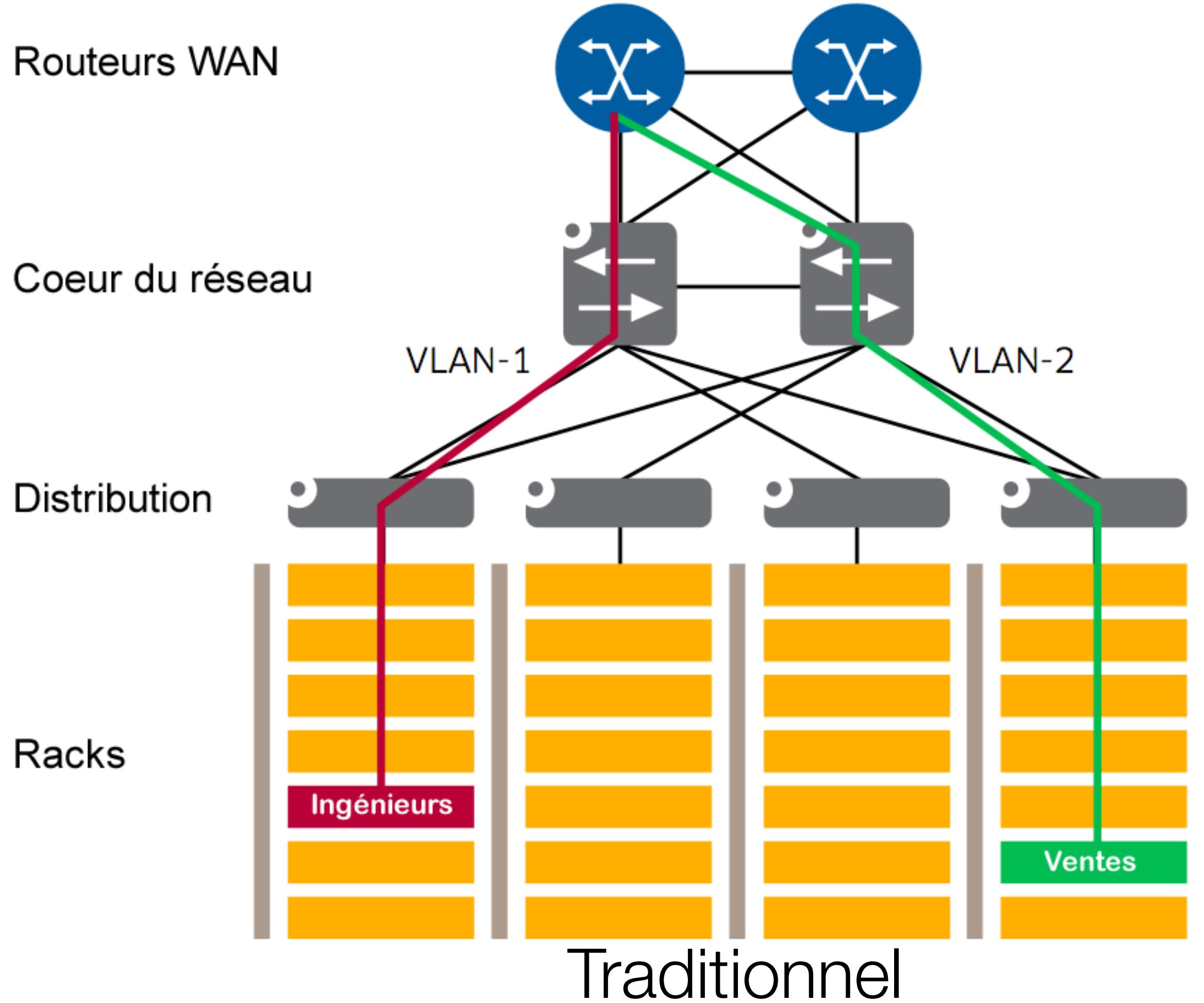
Étude de cas : VLANs



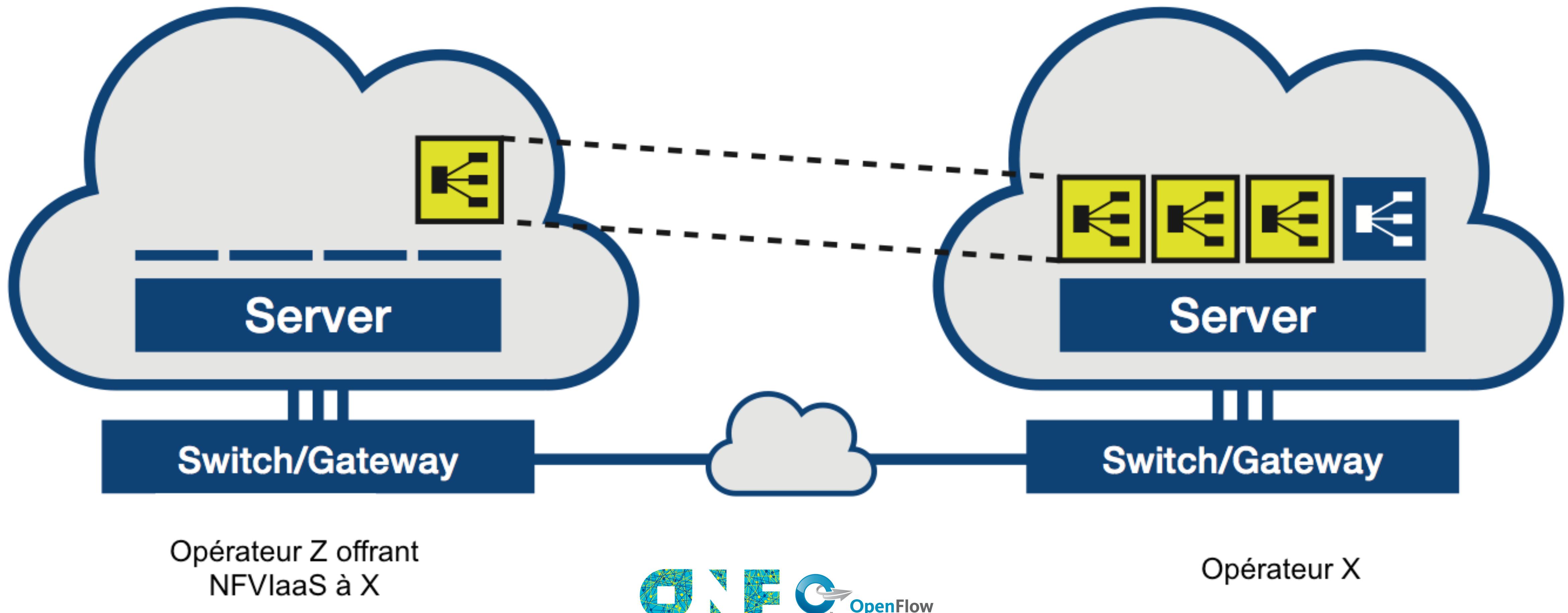
Étude de cas : WANs



Étude de cas : Supervision



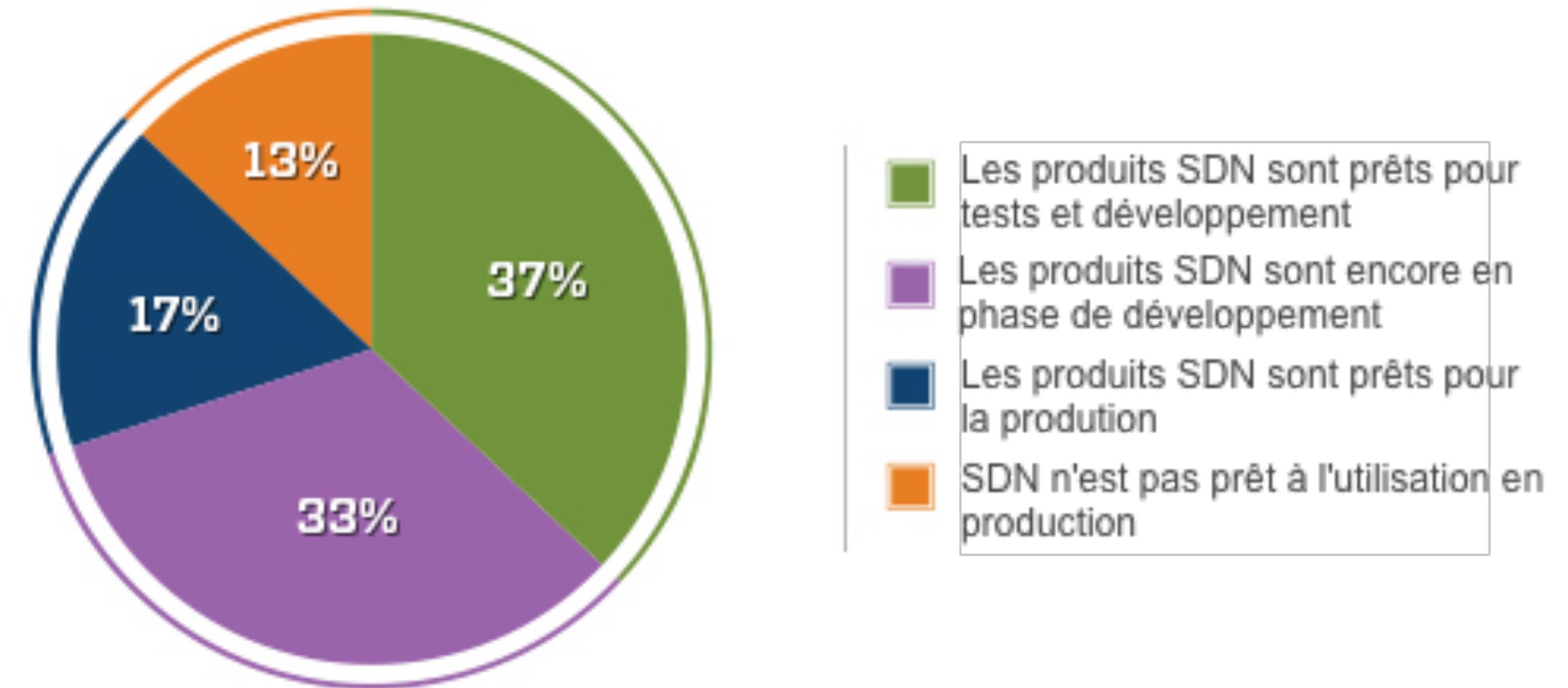
Étude de cas : NFVlaaS



Conclusion

- Pour le Cloud Computing
 - Réel besoin
- SDN une possibilité
- Marché en attente
- Risques contre opportunités

Comment décrivez-vous l'état actuel de la technologie SDN ?



TechTarget, Software-Defined Networking Survey 2013



Merci.

Avez-vous des questions ?



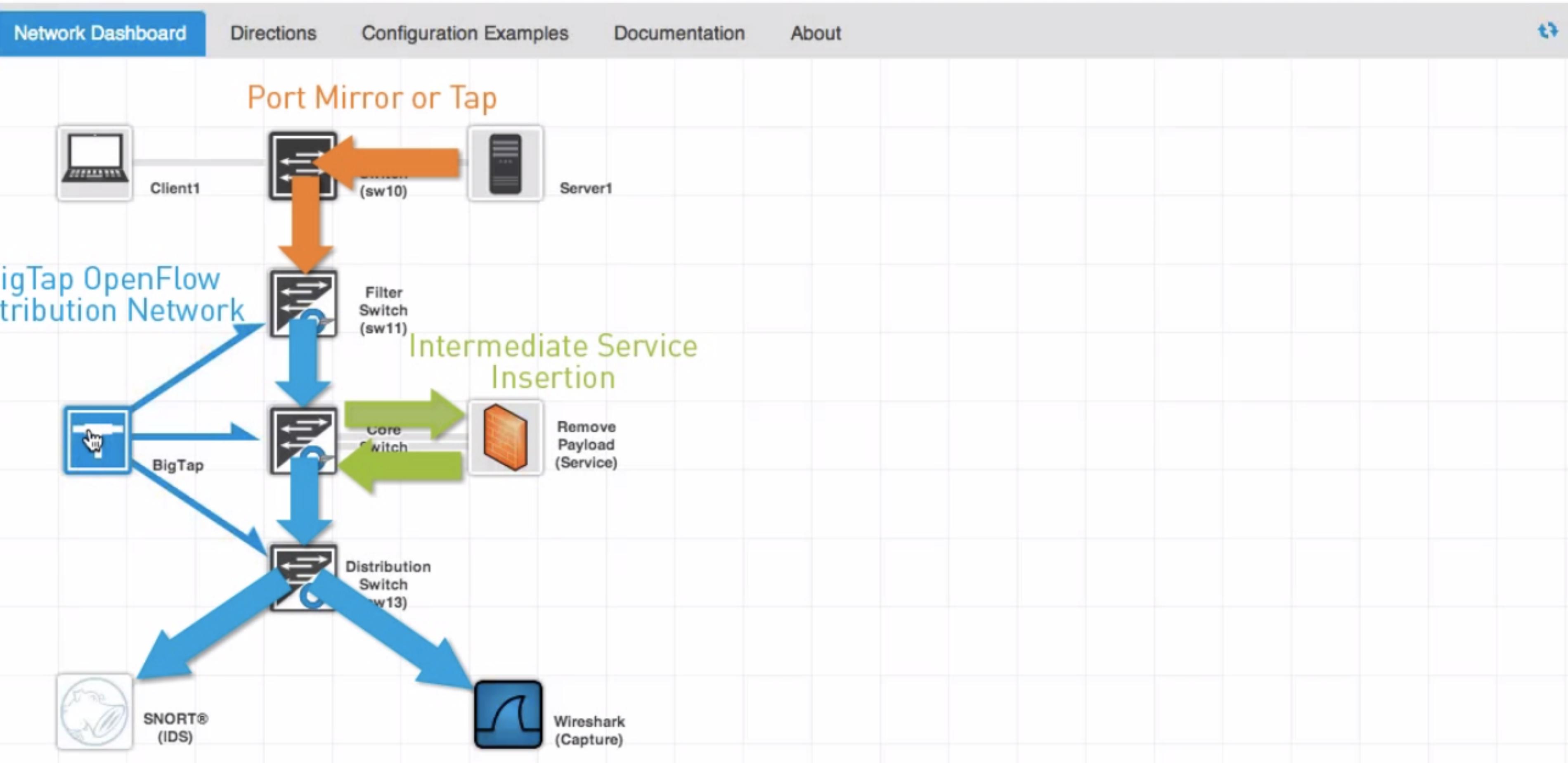
BigTap Demo Dashboard

Demo status:
Running

[Stop Demo](#)



SDN



Big Tap Monitoring Fabric

BigTap : 500\$/moi
Big Virtual Switch : \$4200/moi

CISCO ONE CONTROLLER

Devices Flows Troubleshoot TIF Manager default admin

Nodes Learnt

Node Name	Node ID	Ports
L-Switch-4	OF 00:00:00:00:00:00:00:04	veth_host41(1) veth_host42(2) L4_3-C1_4(3) L4_4-C2_4(4)
L-Switch-3	OF 00:00:00:00:00:00:00:03	veth_host32(1) veth_host31(2) L3_3-C1_3(3) L3_4-C2_3(4)
L-Switch-2	OF 00:00:00:00:00:00:00:02	veth_host21(1) veth_host22(2) L2_3-C1_2(3)

Static route Configuration

Add Static Route Delete Static Route(s)

Name	Static Route	NextHop address
No data available		

Subnet Gateway Configuration

Add Gateway IP Address Delete Gateway IP Address(es) Add Ports

Name	Gateway IP Address/Mask	Node/Ports
No data available		

Cisco eXtensible Network Controller

Cisco XNC GUI
ACI pour \$125000

Nicira Network

Logged in as: data1 Settings Help Wiki Sign Out

Project Labs

CURRENT PROJECT data1

Manage Compute

Overview Instances Volumes Images & Snapshots Access & Security

Manage Network Networks Routers

Network Topology

Network Topology

Launch Instance Create Network Create Router

The Nicira Network interface displays a network topology diagram. On the left, a sidebar shows navigation links for Project, Labs, Manage Compute, Overview, Instances, Volumes, Images & Snapshots, Access & Security, Manage Network, Networks, Routers, and Network Topology. The Network Topology section is currently selected. At the top right are buttons for Launch Instance, Create Network, and Create Router. The main area shows a network diagram with several components: a yellow vertical bar labeled "VMware Internal (External)", a black box labeled "Interconnect router", a green vertical bar labeled "Provider Router (External)", a teal vertical bar labeled "Core InterConnect (External)", a blue vertical bar labeled "Edge 1", and a purple vertical bar labeled "Edge 2". Between these bars are various network segments and connections, including a blue line labeled "192.168.1.0/24" and a purple line labeled "192.168.2.0/24". A small icon of a person is visible near the center of the diagram.

VMware NSX Network Virtualization Overview

\$5996/CPU-Socket
ou \$34/VM/mois



General

Alerts

Applications

Configurations

Audit Log

Support Logs

OpenFlow Monitor

OpenFlow Topology

OpenFlow Trace

General / OpenFlow Topology

* Src

* Dst

+/-

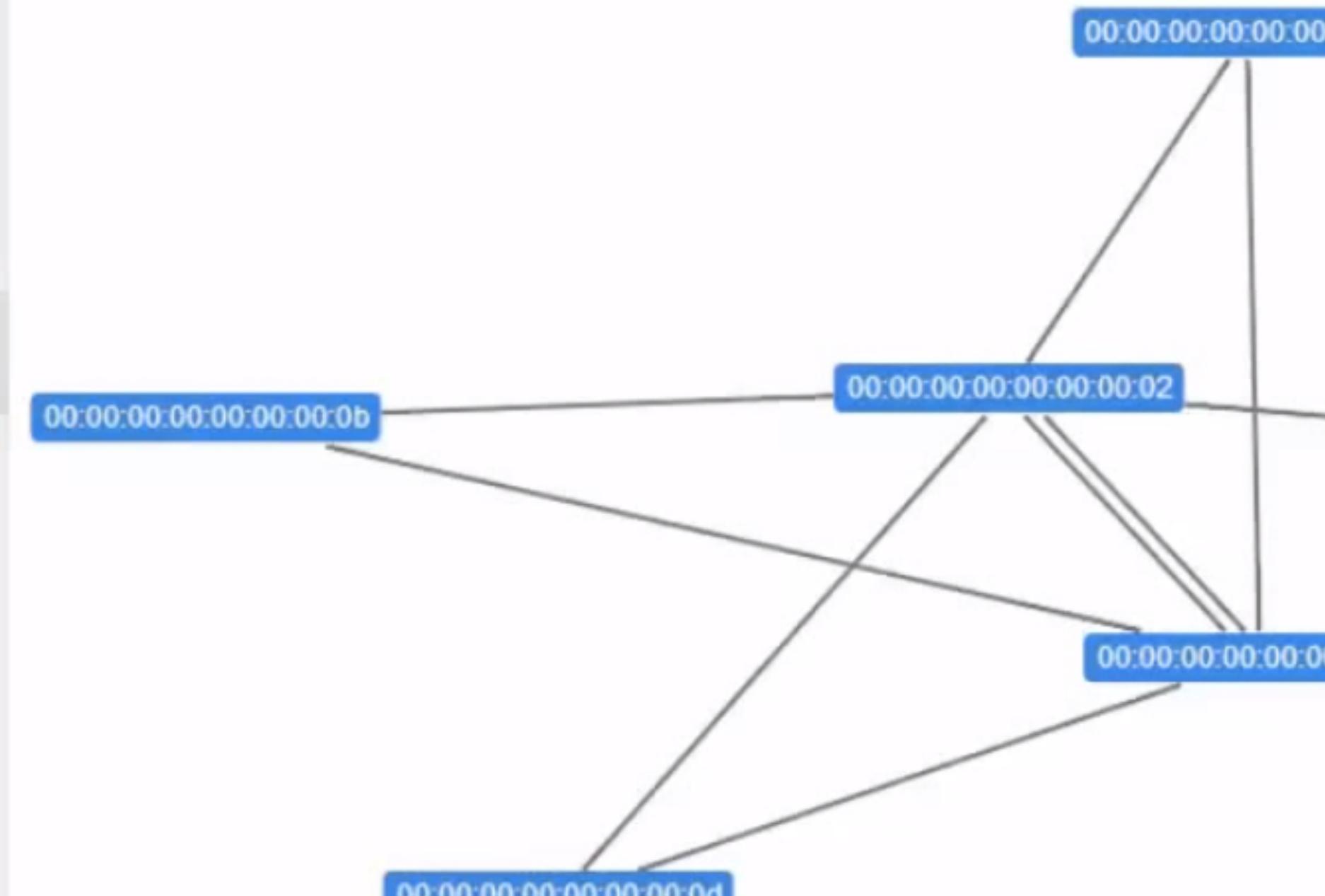
Search

Shortest Path

No Label

View

Clear ARP Cache



HP VAN SDN Controller

46000\$