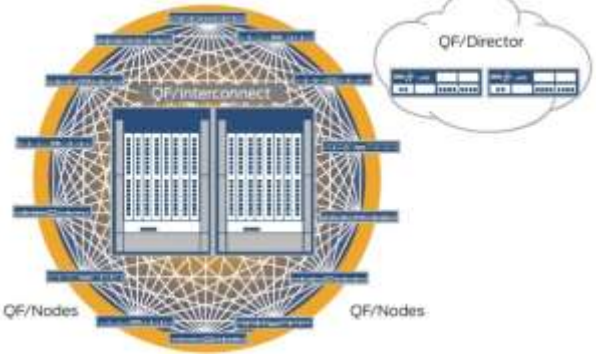
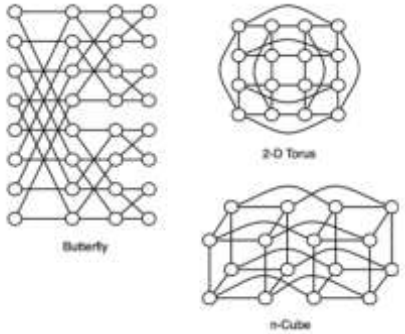
An Introduction of Network Switches

Yaxuan Qi
Venus Team, NSLab
RIIT, Tsinghua Univ.

In courtesy of Juniper, NEC, ONF

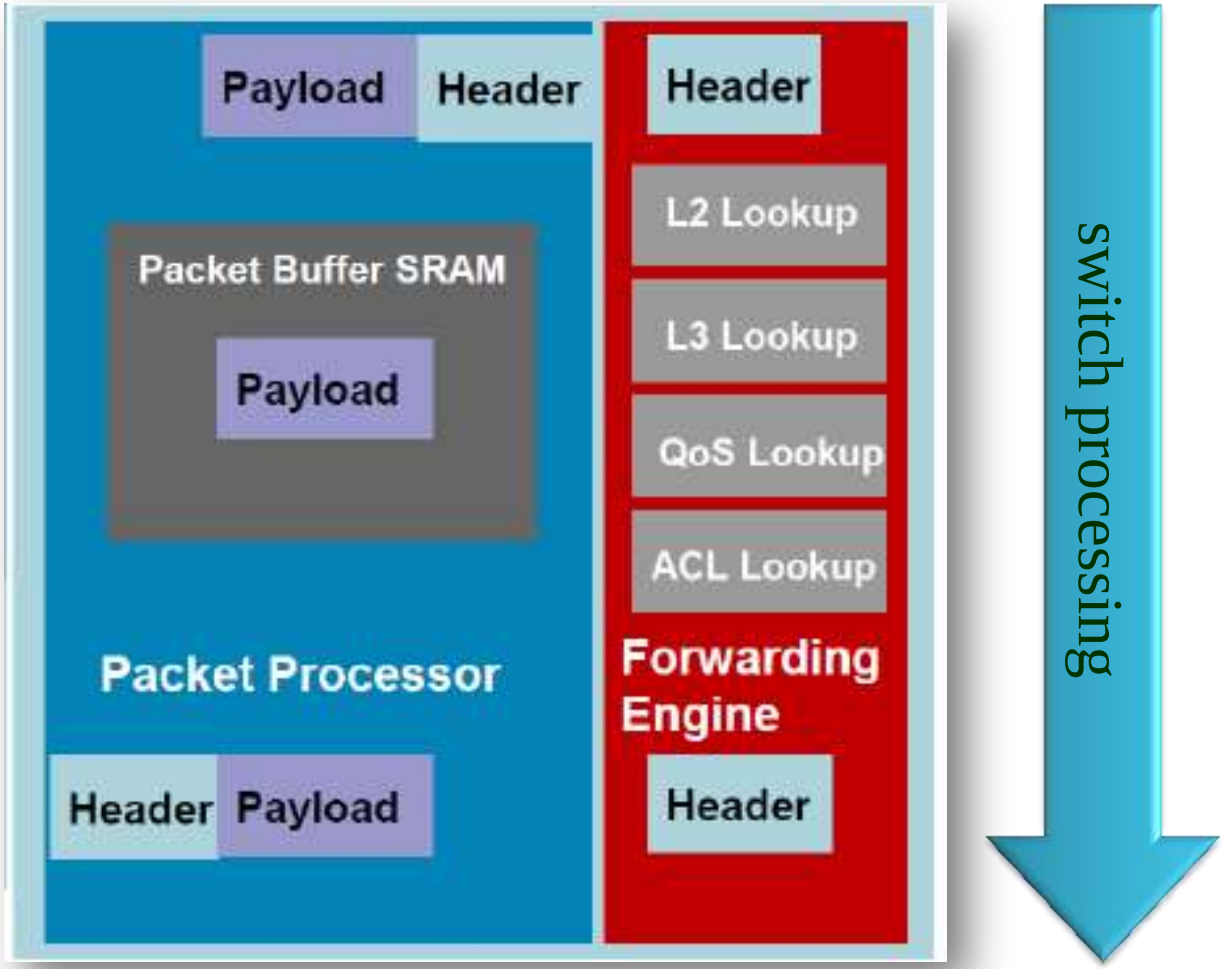
Outline



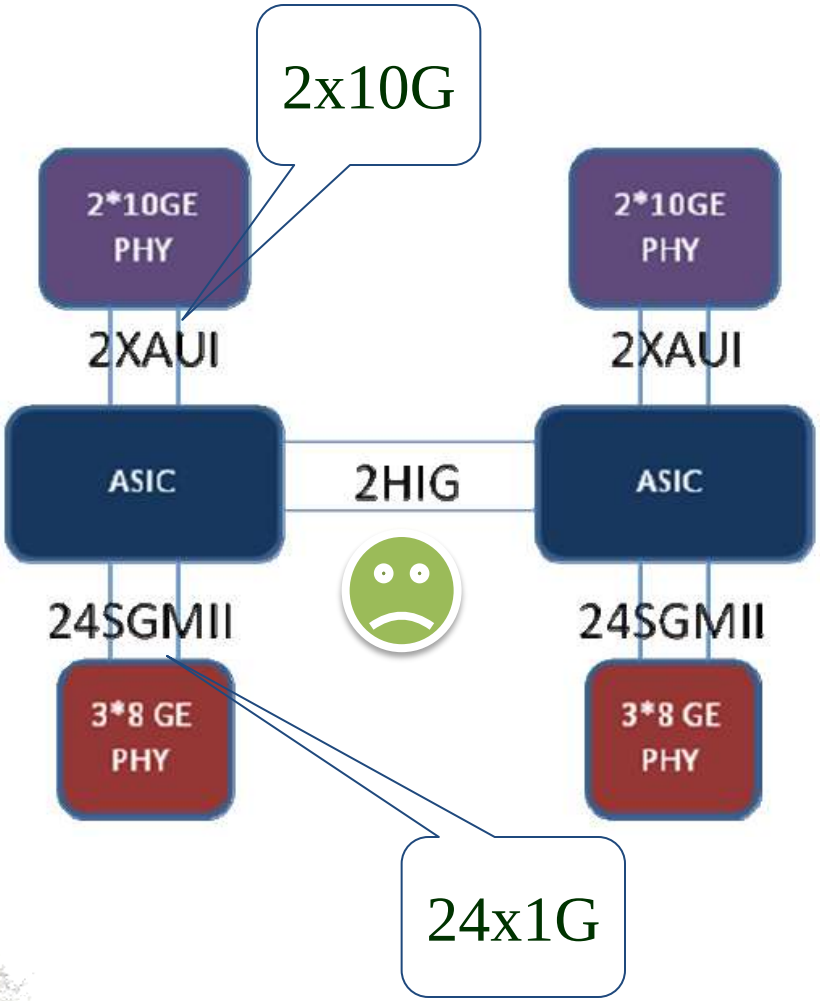


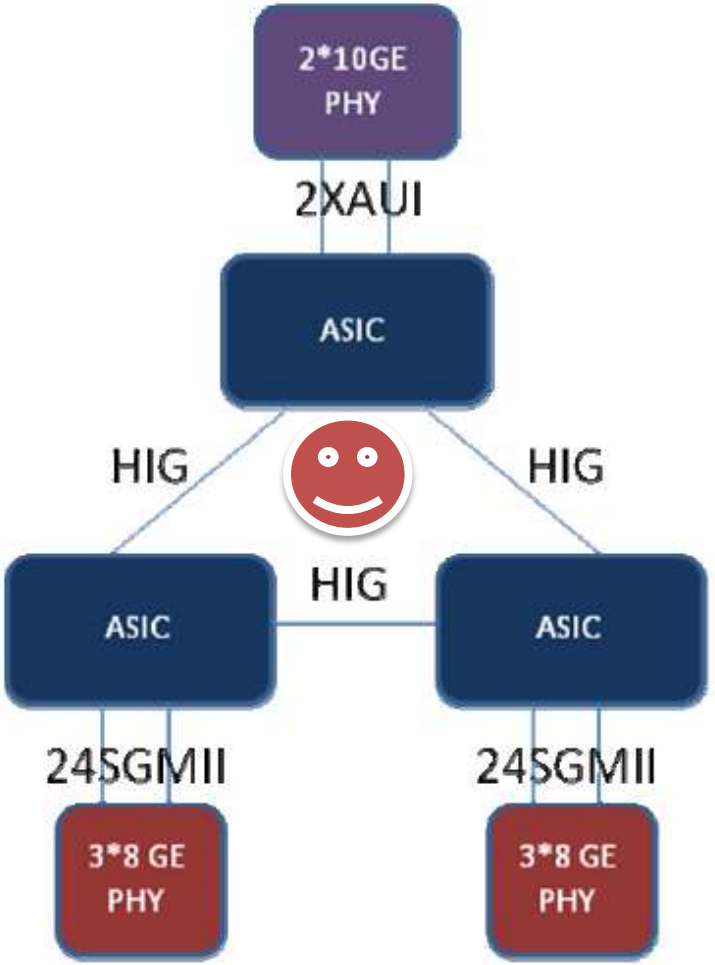
- Fundamentals
  - Chips
  - Boxes
- State-of-the-Art
  - Chassis
  - Fabrics
- Future
  - OpenFlow
  - SDN

A Single Switch Chip

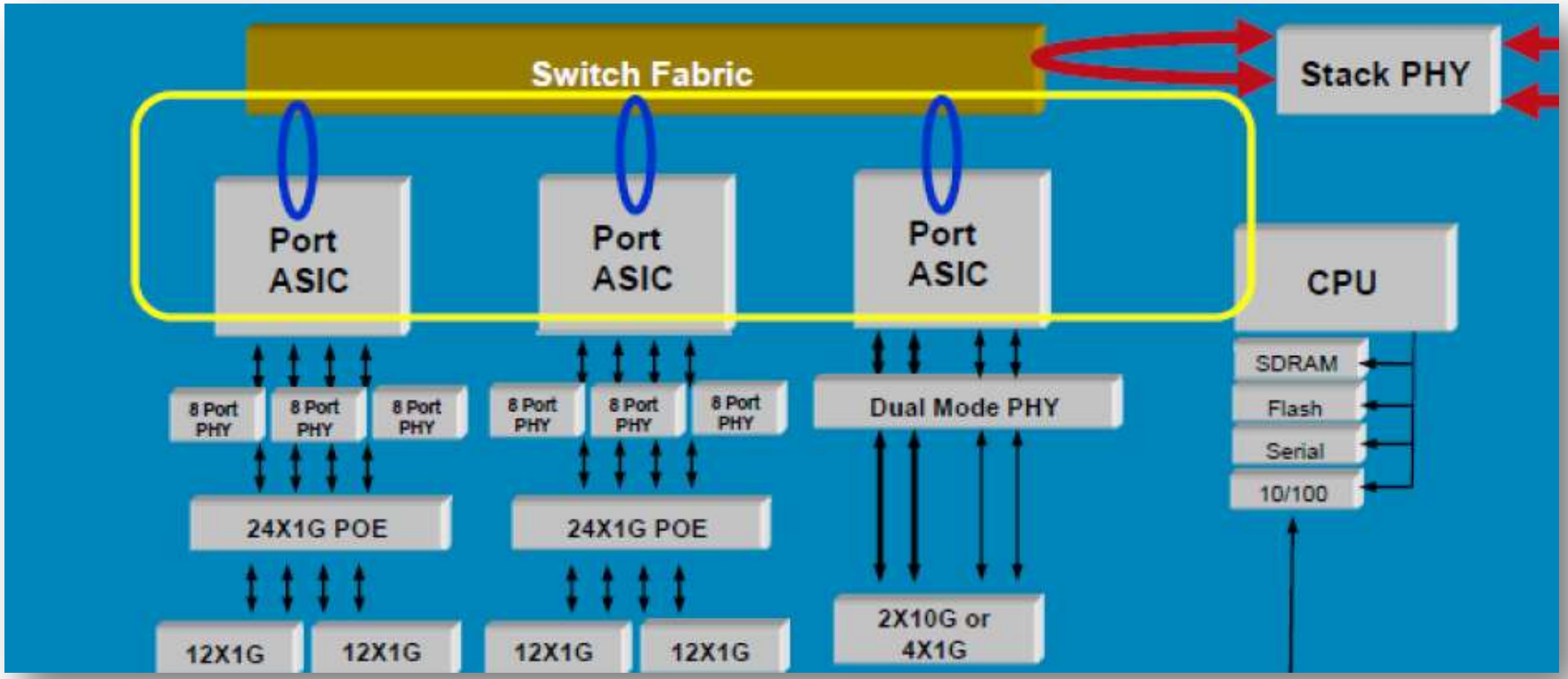


Switch Chips

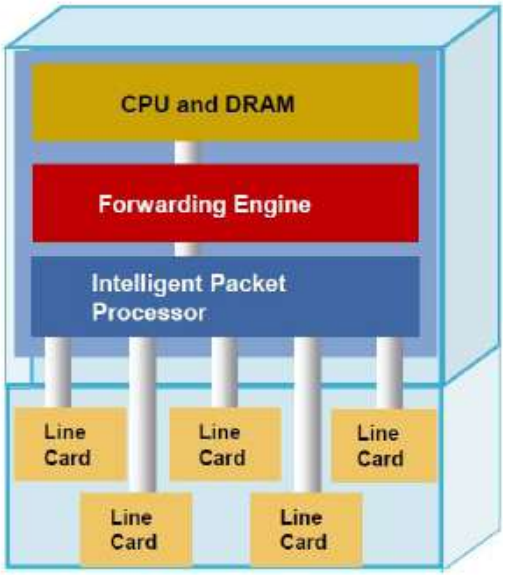


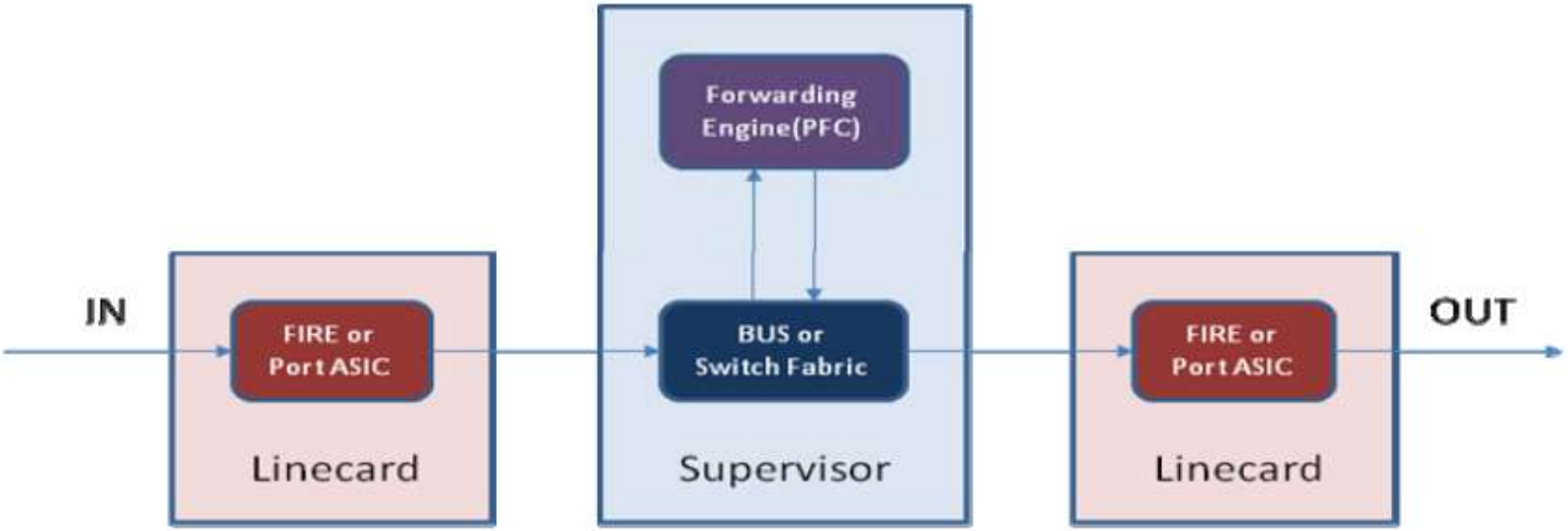


Chips in a Box

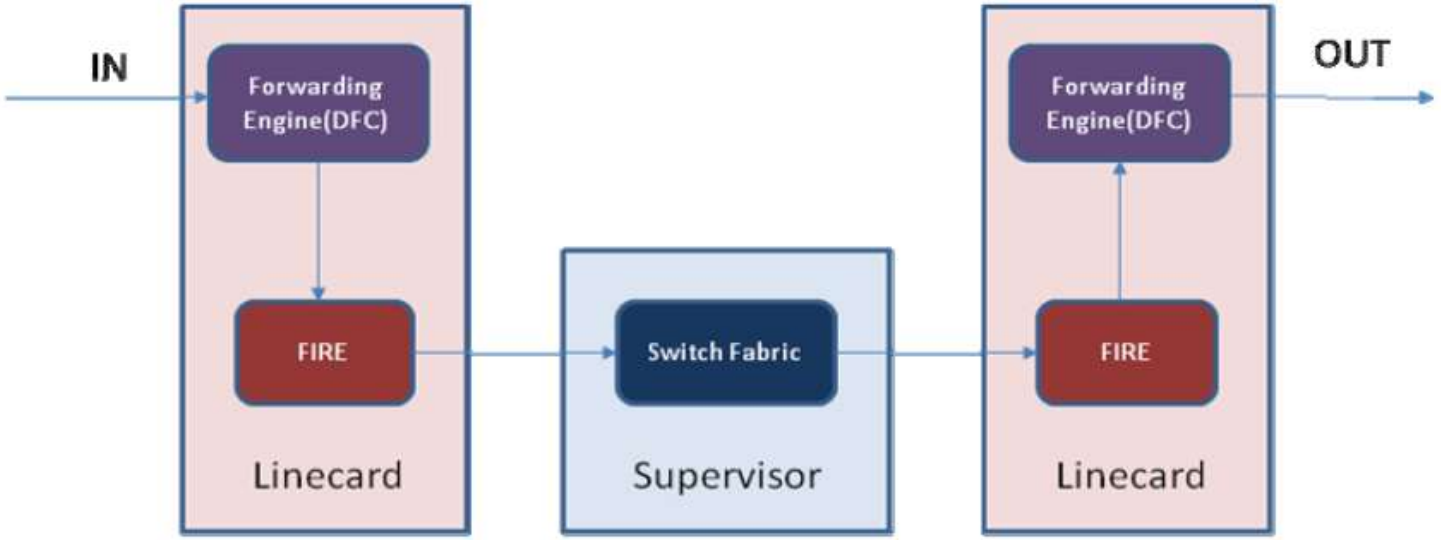


Chassis: Cisco Catalyst 65xx

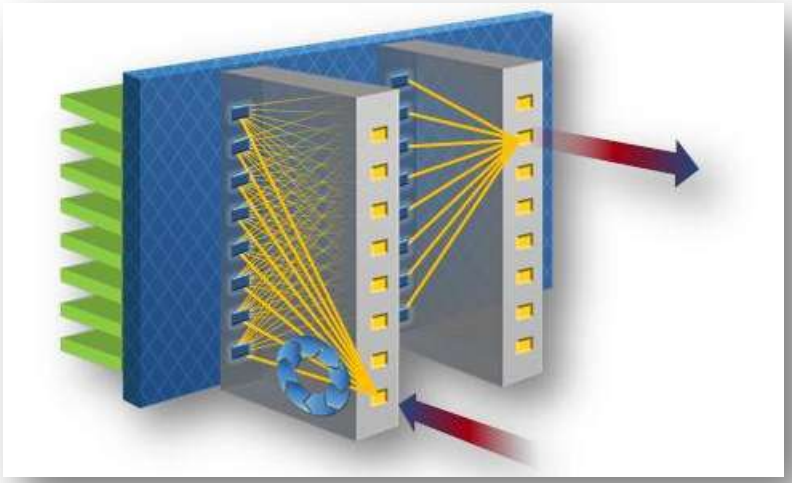


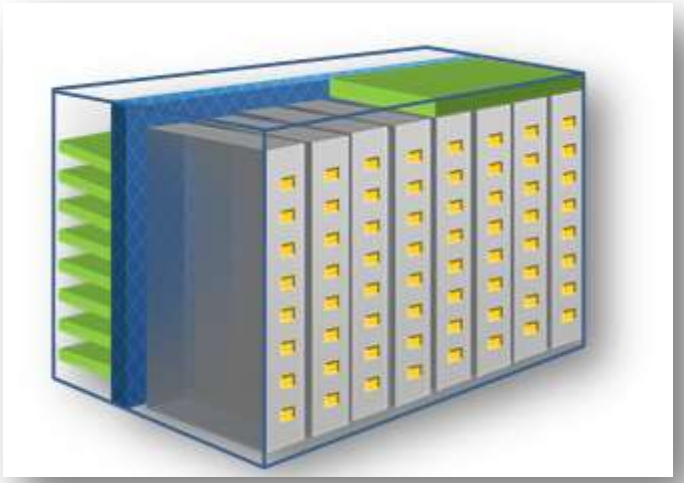


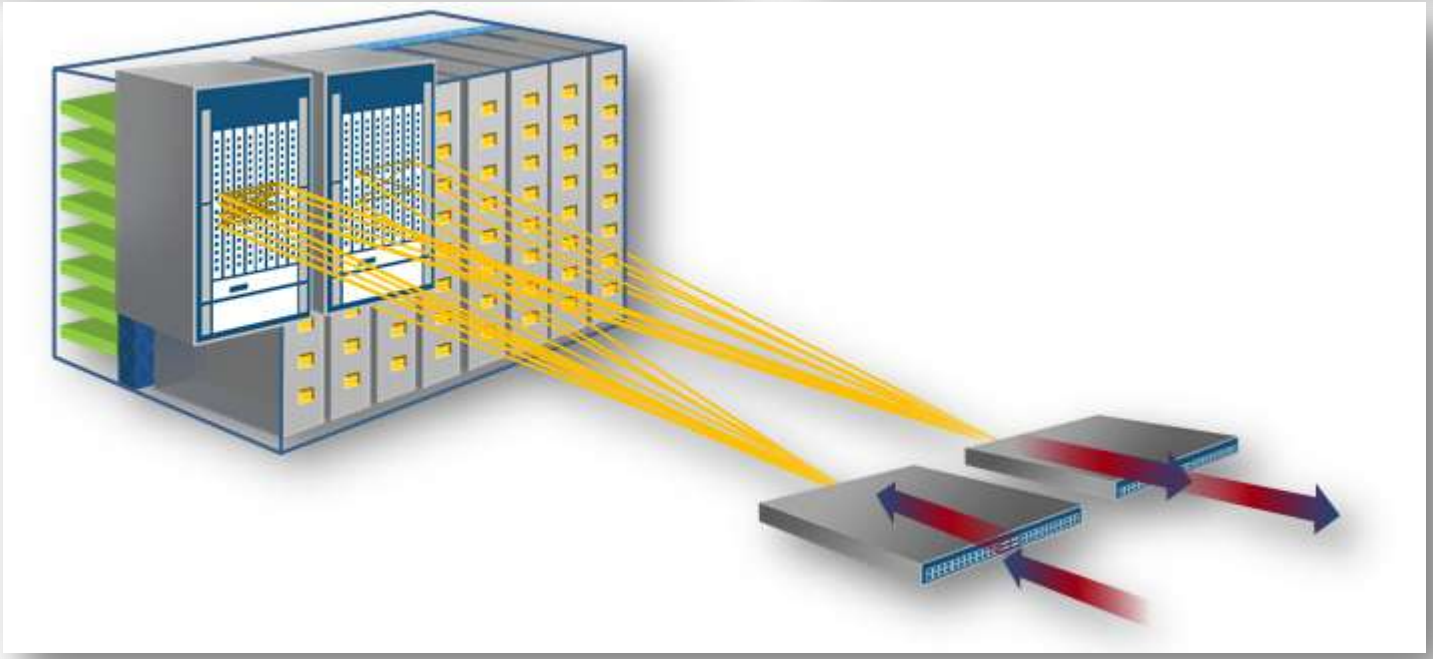
Chassis: Cisco Nexus 70xx



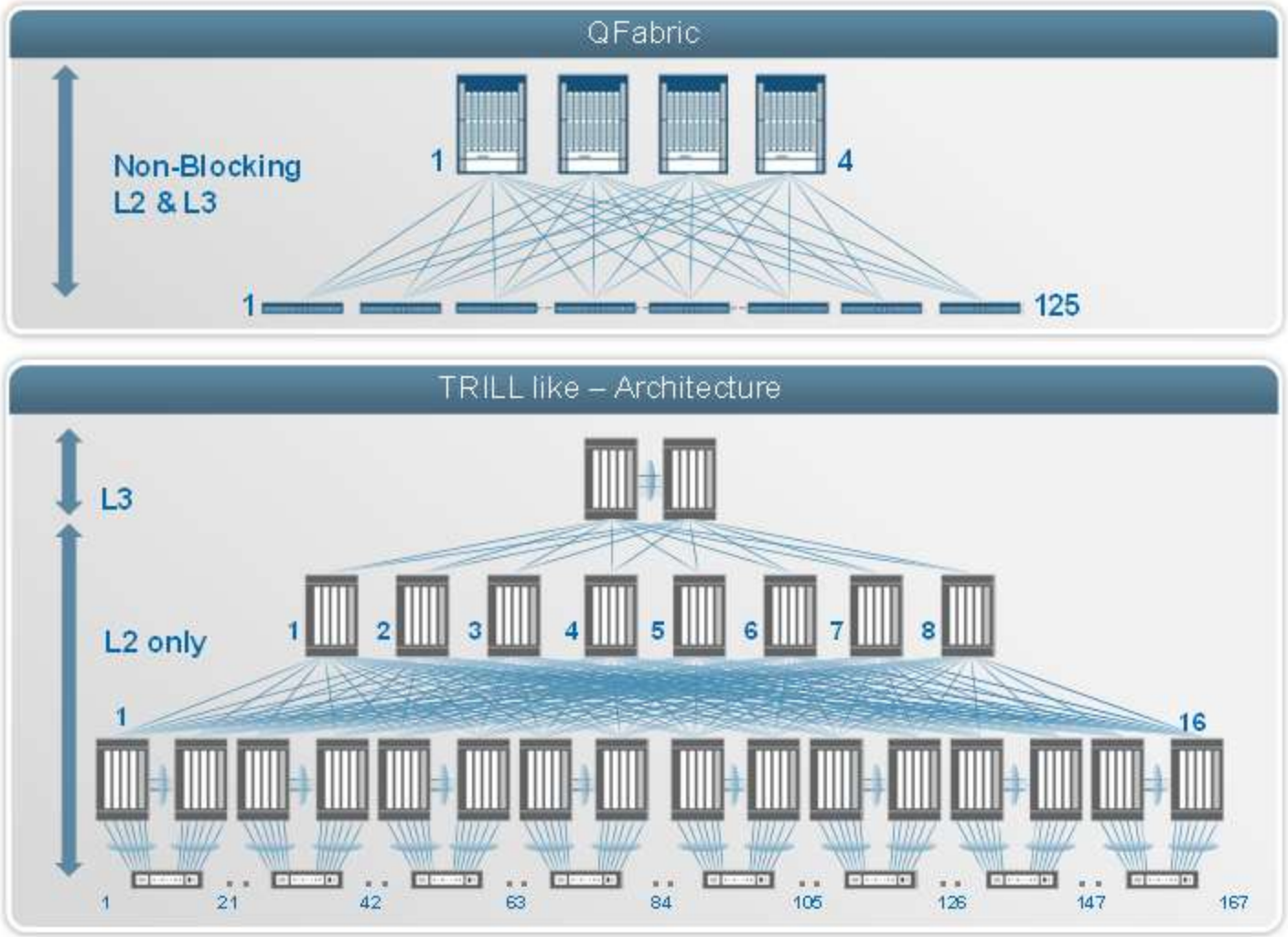
From Switch to Fabrics



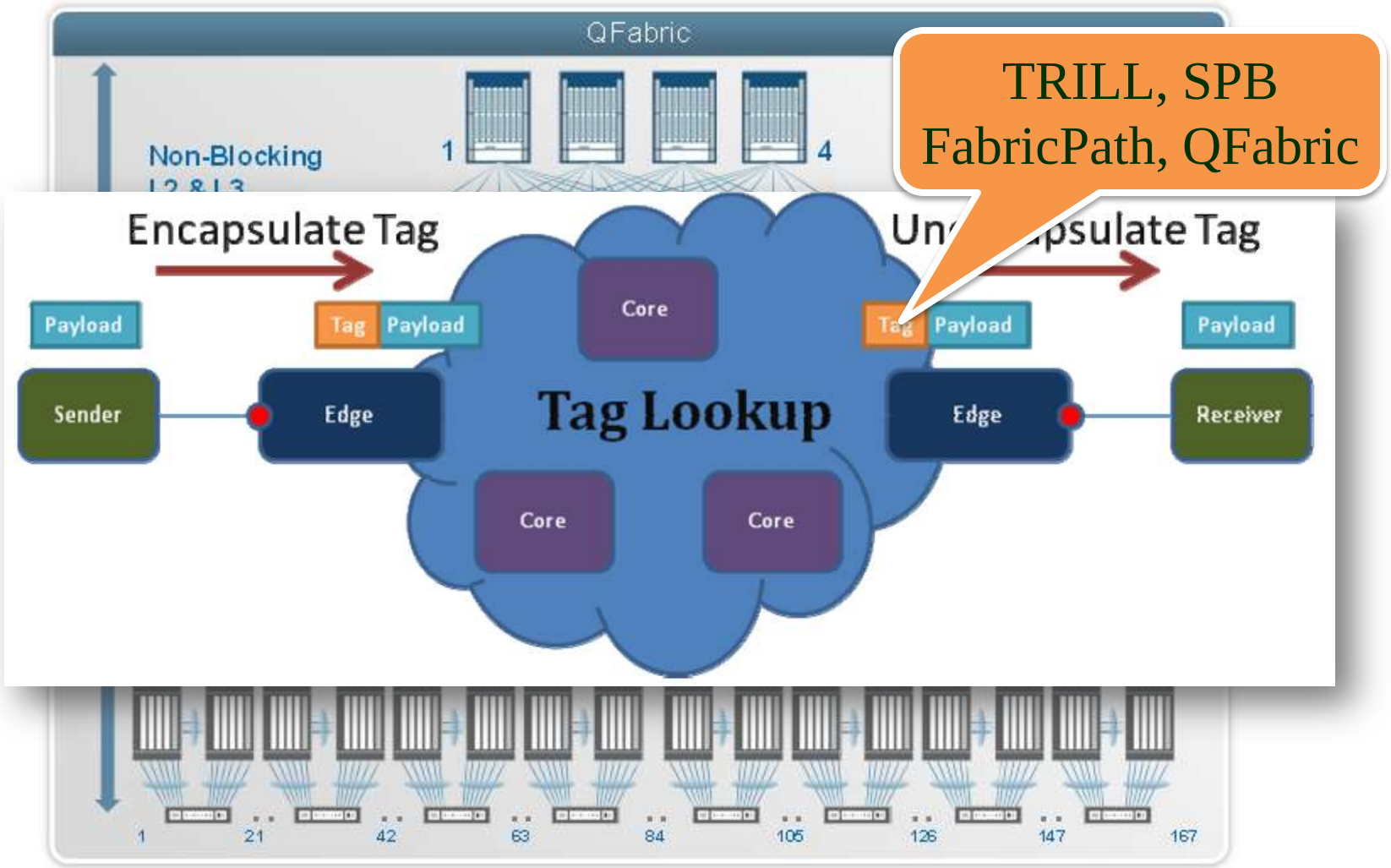




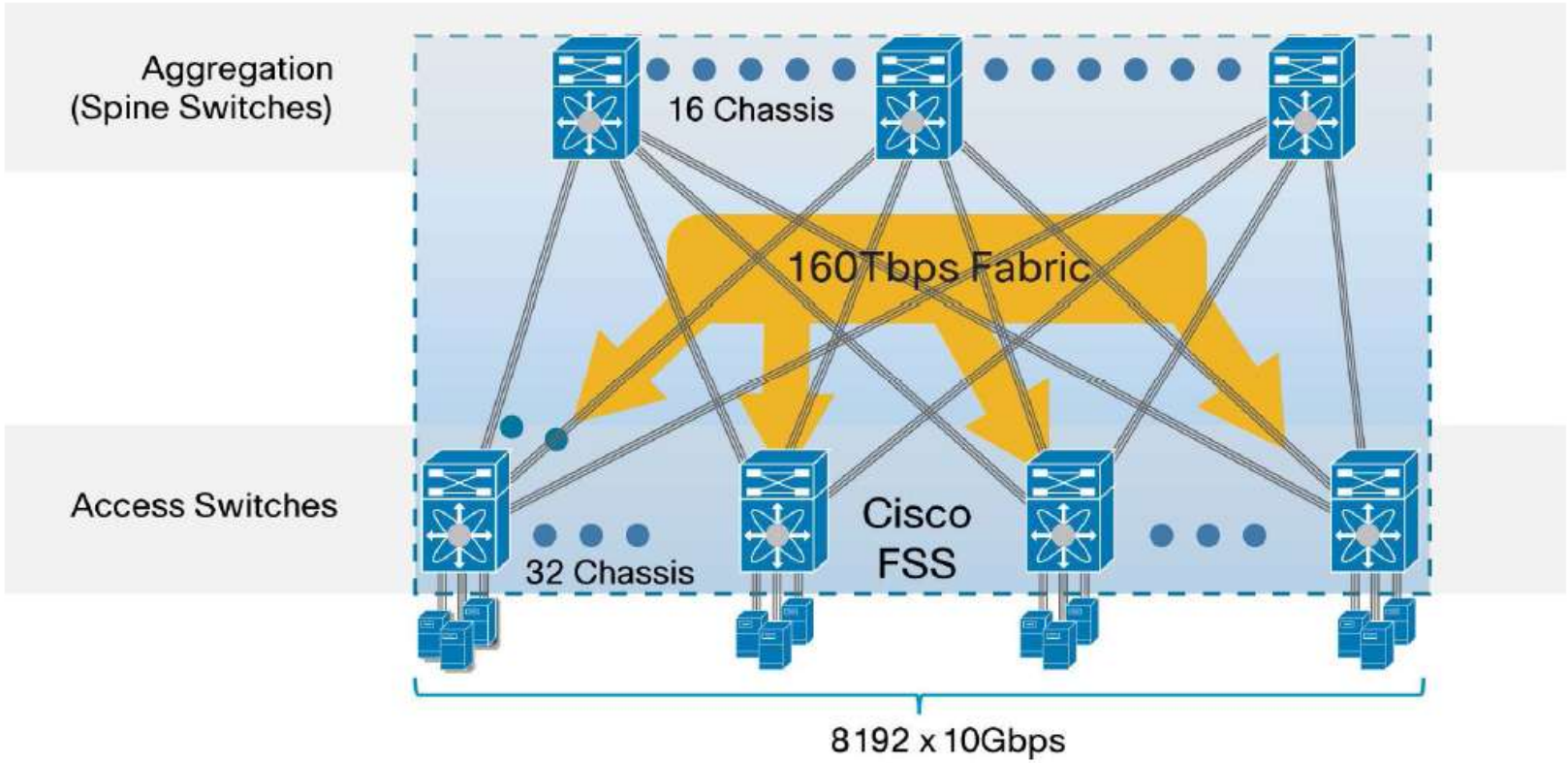
State of the Art Network Fabric



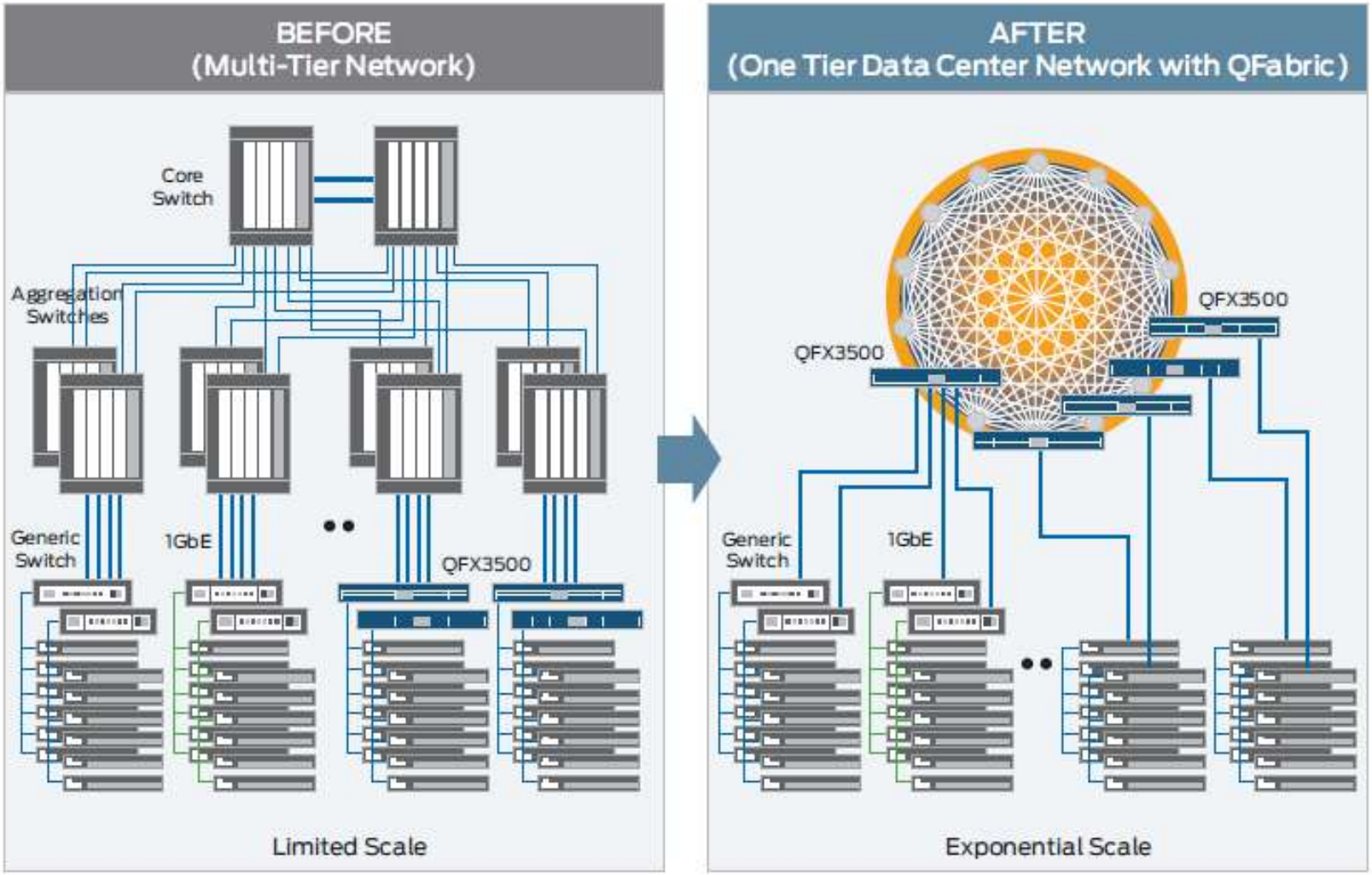
State of the Art Network Fabric



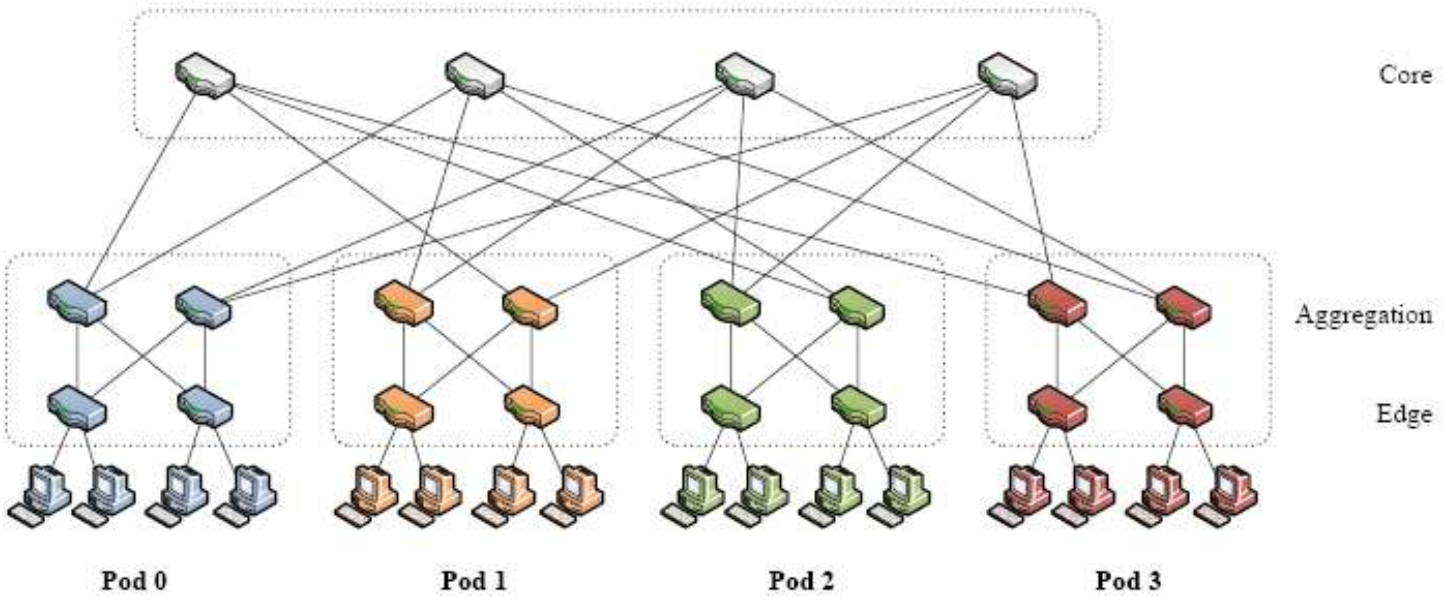
Cisco FabricPath



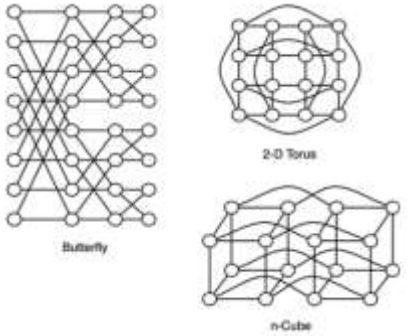
Juniper QFabric

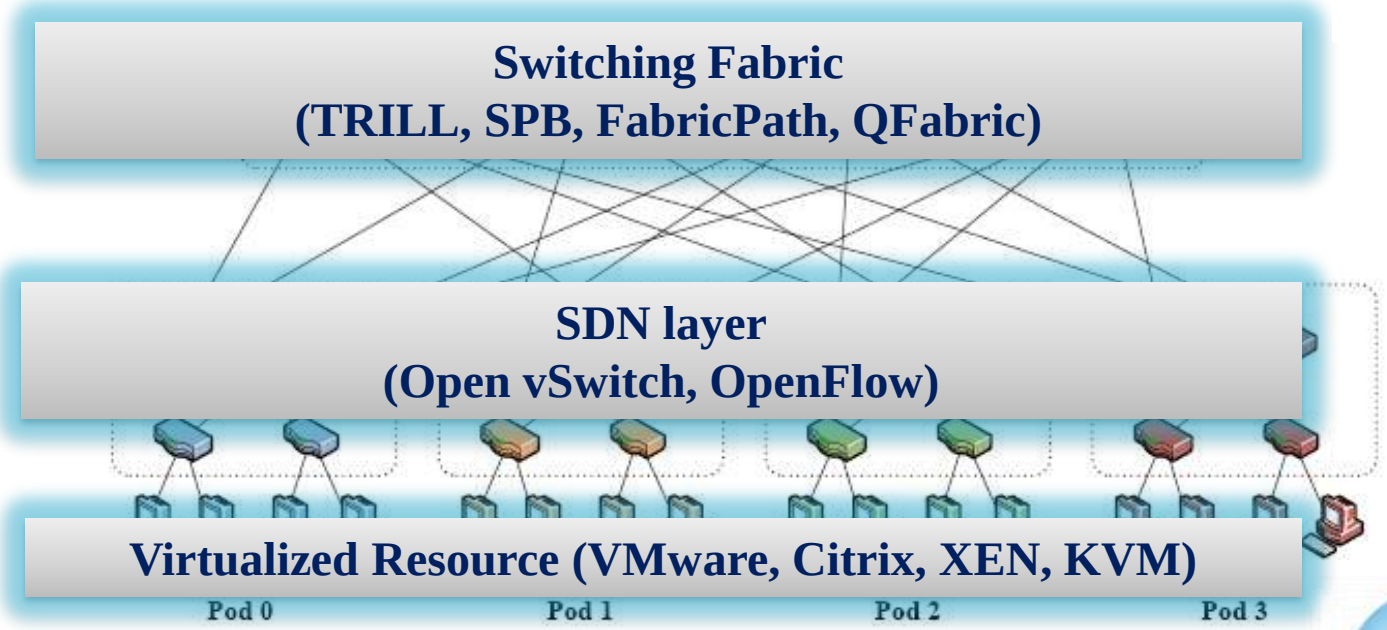


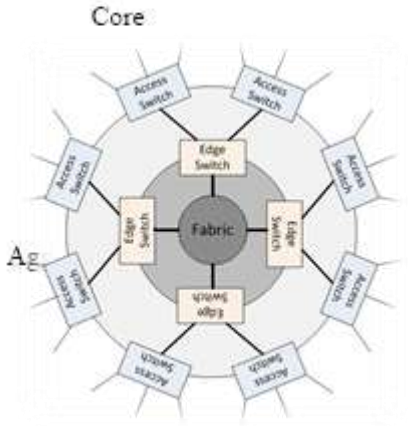
Innovation with Switches



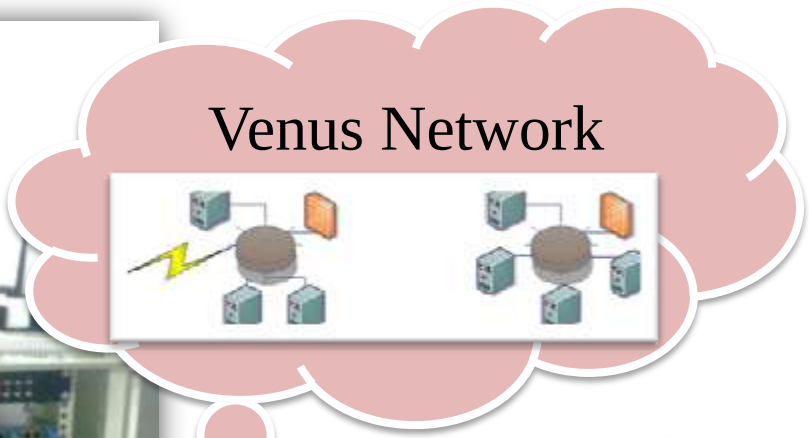
Innovation with Switches

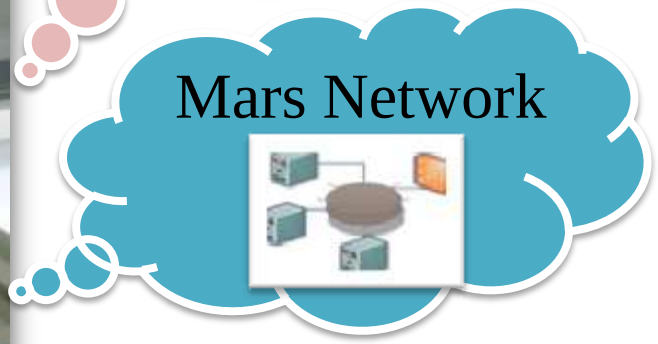


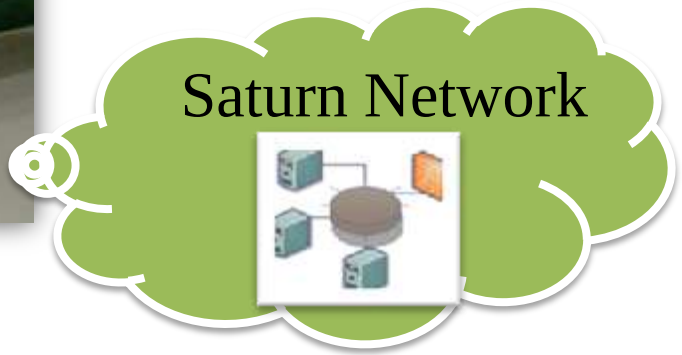




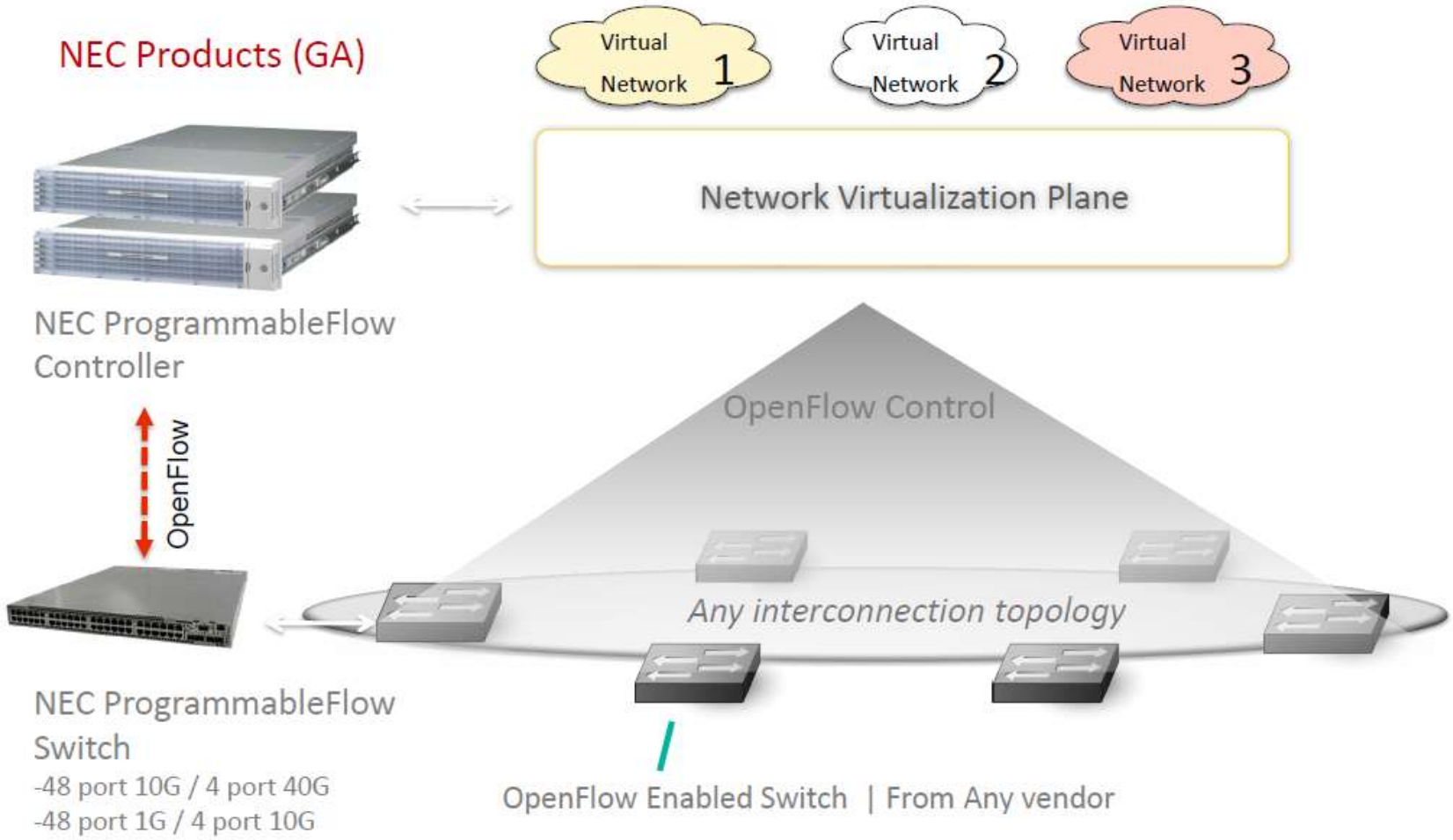
NSLab LiveCloud



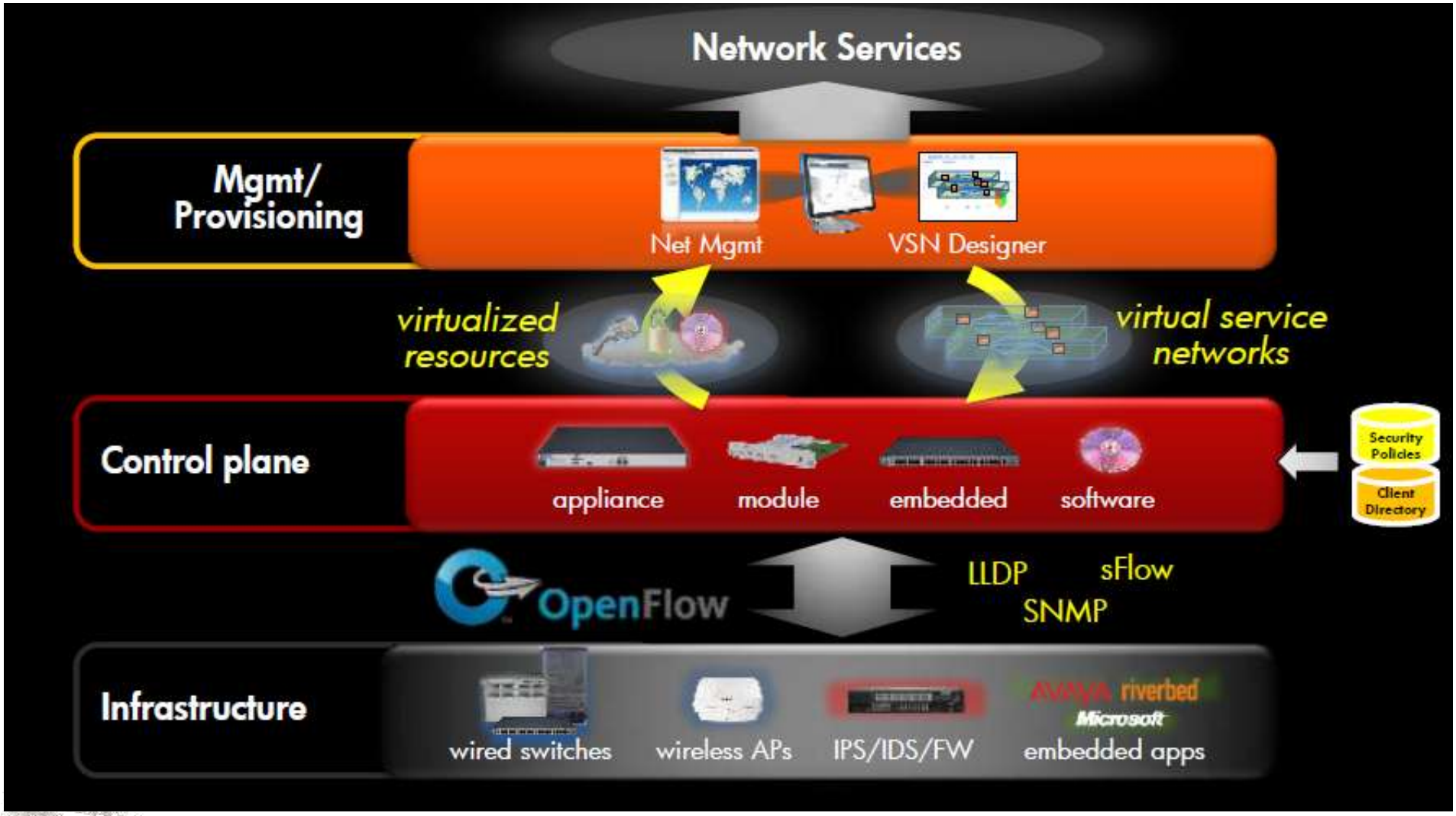




NEC ProgrammableFlow



The Future


Network Services
Mgmt/
Provisioning
Net Mgmt
VSN Designer
virtualized
resources
virtual service
networks
Control plane
appliance
module
embedded
software
Security
Policies
Client
Directory
OpenFlow
LLDP
sFlow
SNMP
Infrastructure
wired switches
wireless APs
IPS/IDS/FW
AVAYA
riverbed
Microsoft
embedded apps

Innovation or Renovation

OpenFlow and Software Defined Networking

Word of caution: techtonic re-imaginings will mean a few steps back before moving forward