



ENDEAVOUR



TOULOUSE

SDN

IXP

TouSIX

▶ TouIX

▶ SDN

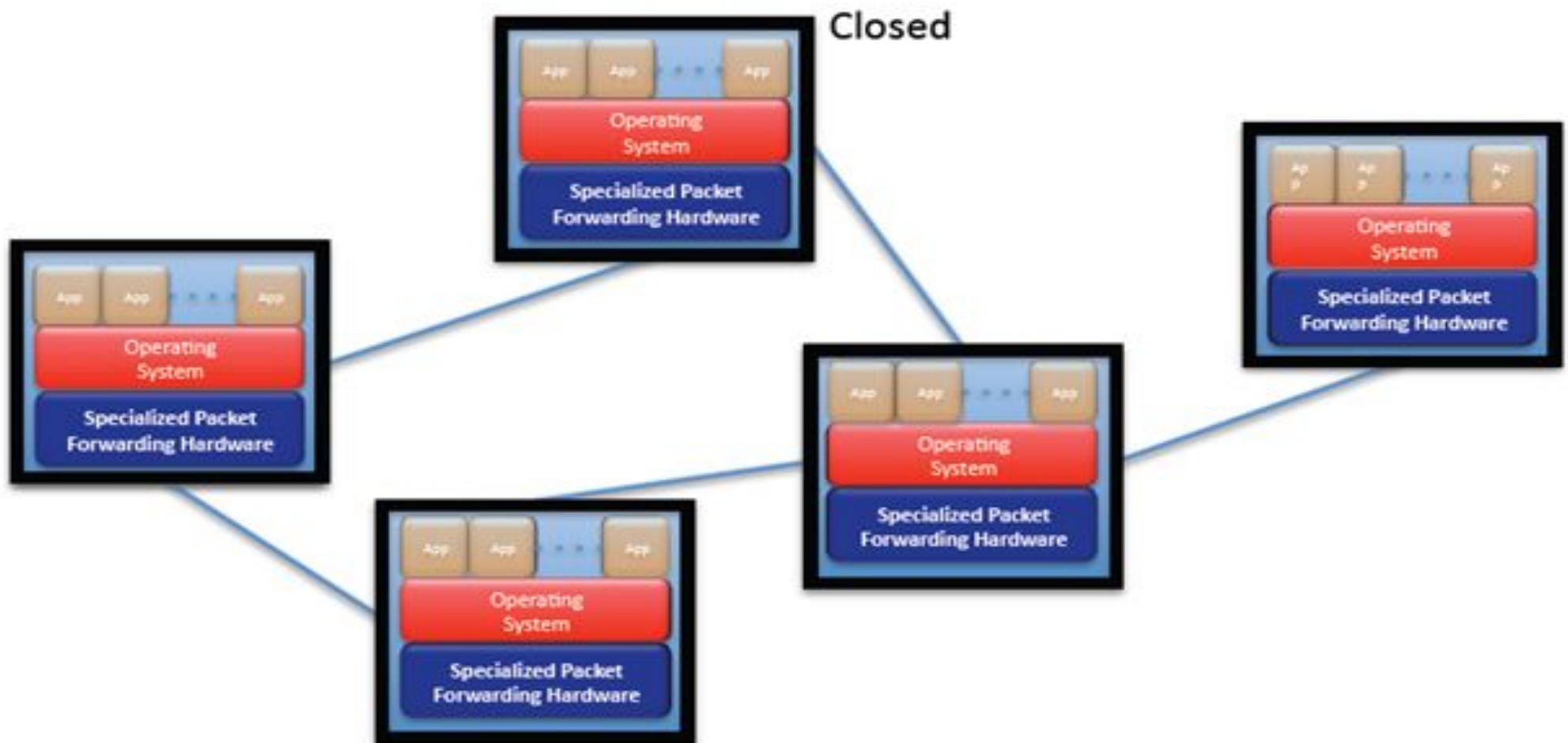
▶ IXP Fabric

▶ TouSIX in production

▶ TouSIX Manager

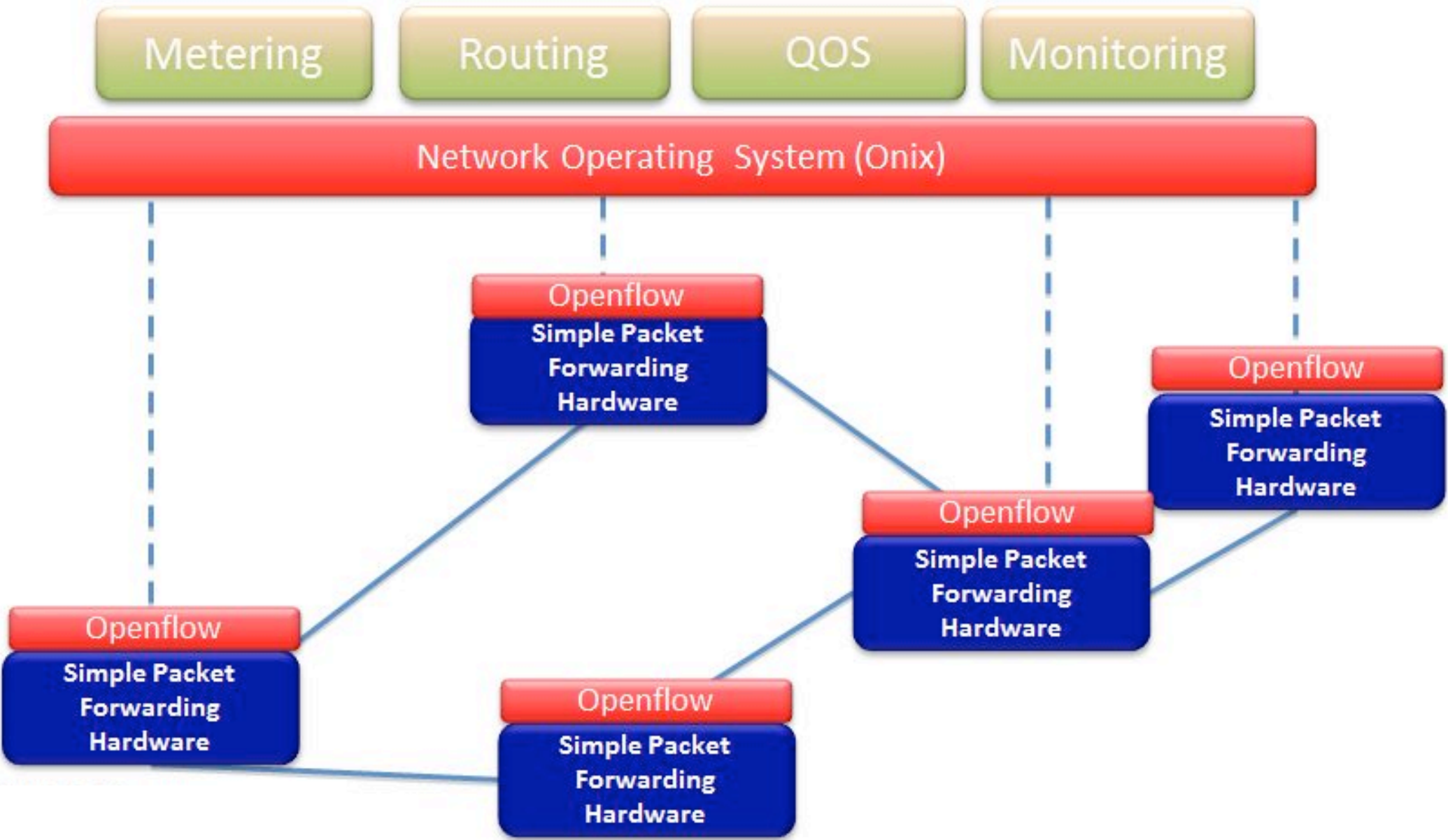
▶ What's next

Non SDN





SDN







▶ TouIX

▶ SDN

▶ IXP Fabric

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▶ Juste le début

Today IXP Fabric

- Layer 2 switching Fabric
- Broadcast domain
- Loop risks
- Broadcast Storm
- Edge filtering not perfect

Umbrella Fabric

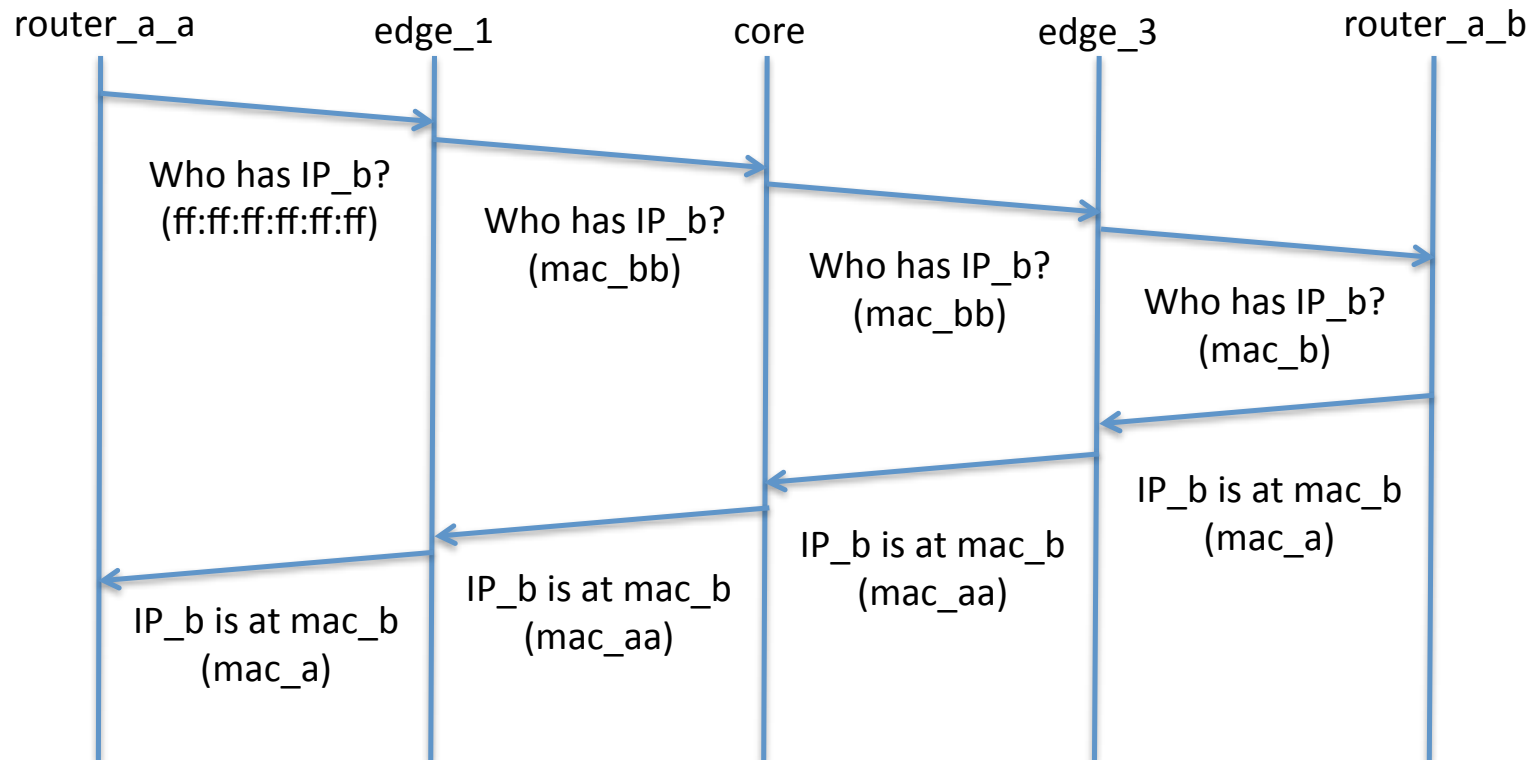
- No more Broadcast
- Edge filtering
- Pseudo Wire
- Segment Routing approach
- Controller less
- Non OpenFlow Core switch
- Monitoring with OpenFlow
- Link redundancy with group fast failover
- Scalable

Umbrella Fabric

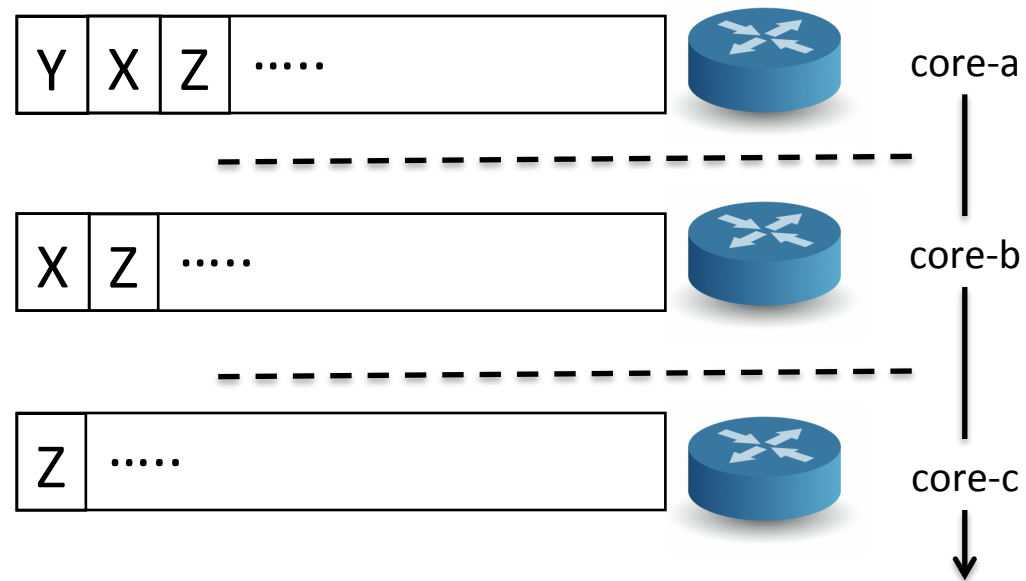
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Research paper submitted

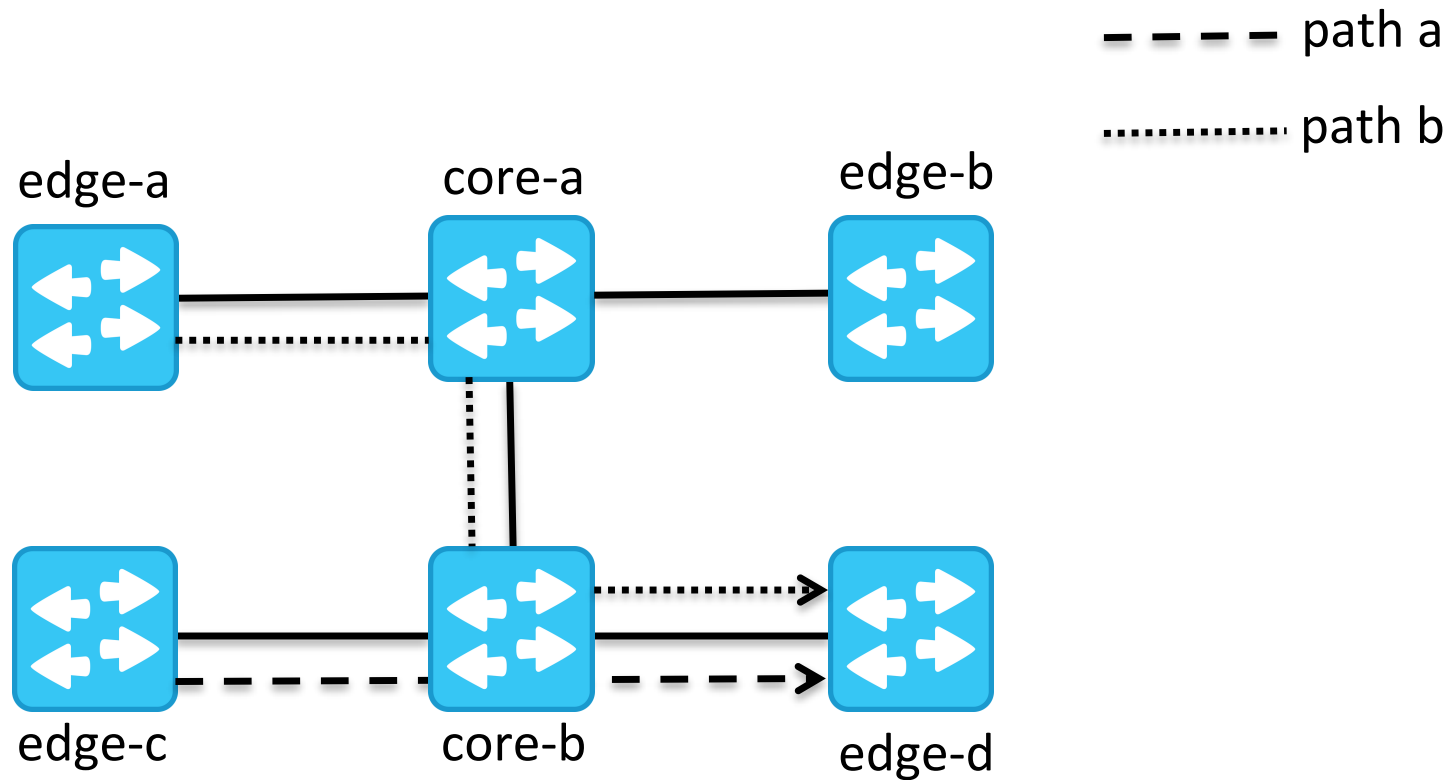
How ARP works w/ Umbrella



Label Switching



Choosing specific path

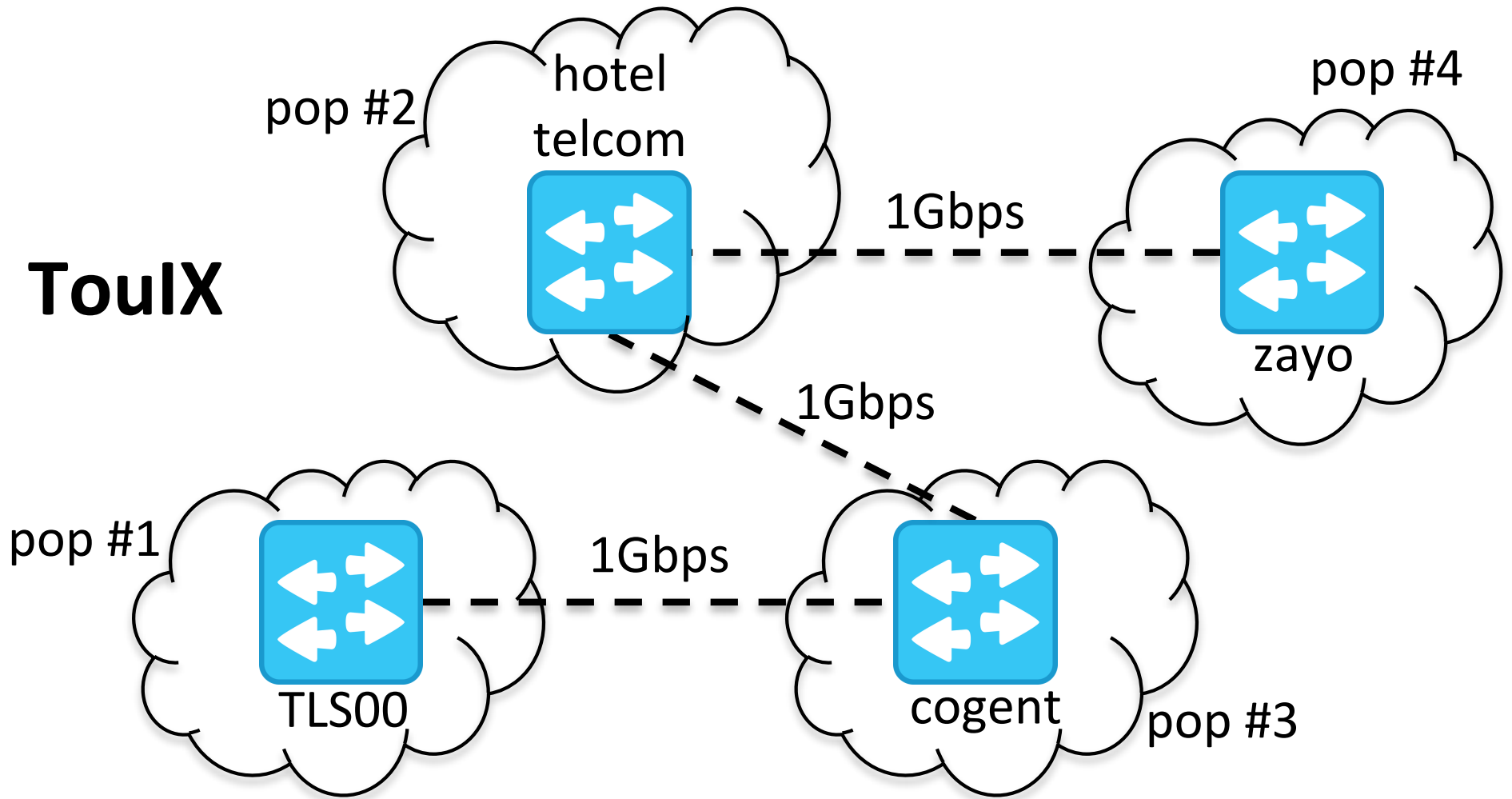


- ▶ TouIX
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- ▶ TouSIX Manager
- ▶ What's next

TouIX >> TouSIX



TouIX



PIC7A8[®]

WHITE BOX SDN



OpenVSwitch 2.x
OpenFlow 1.3 Multi Table
2000 - 4000 rules OF
48 x 1Gbps / 4 x 10Gbps



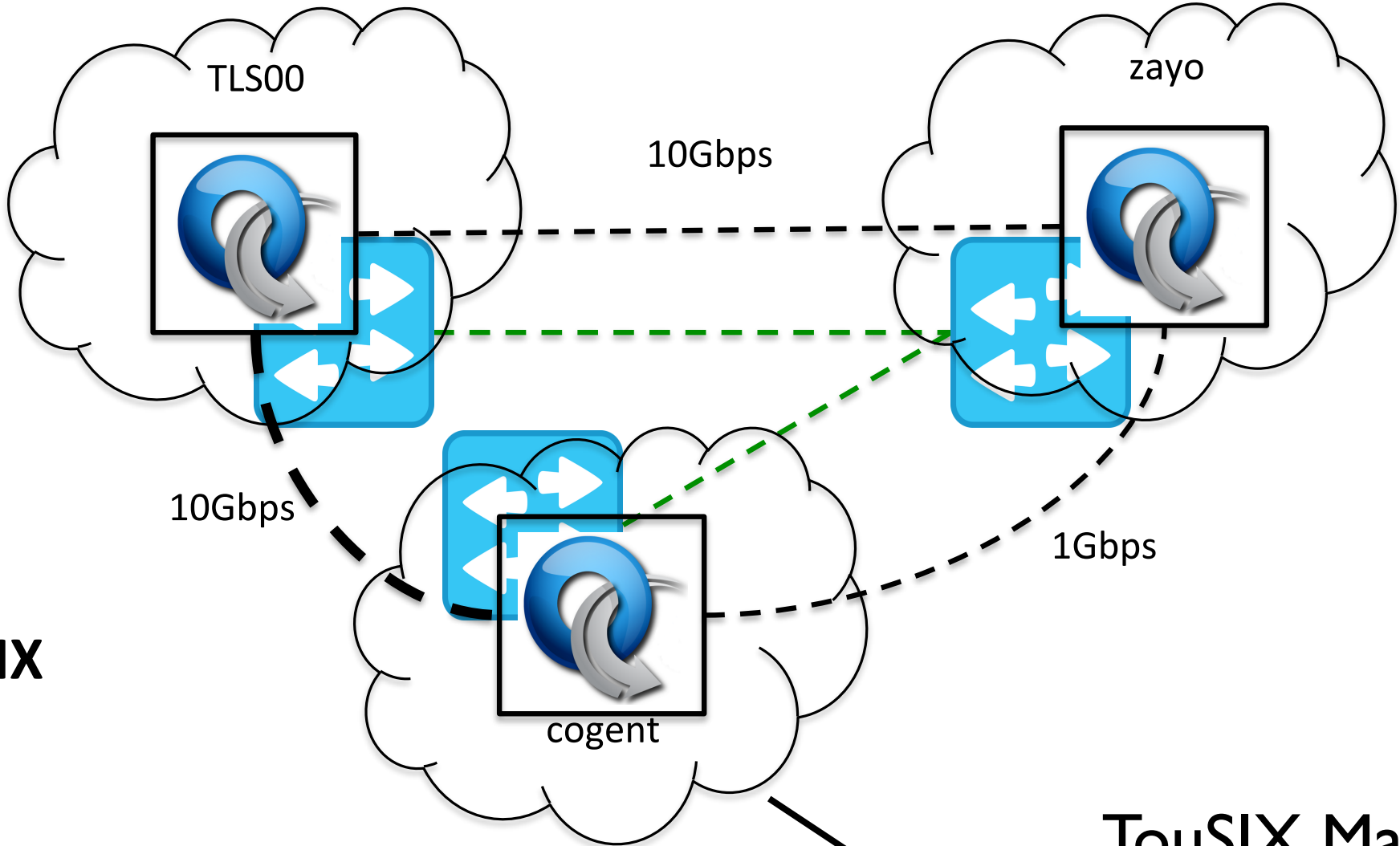
Issue report

- ICMPv6_ND_TPA not supported PicOS 2.4
- OpenFlow table flush on reboot

✓ All fix in Pica8 version 2.6

➡ not deployed yet

TouSIX

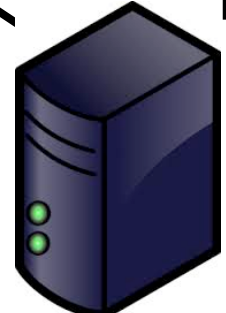


Data



OpenFlow Ctrl and France-IX

**TouSIX Manager
Route Server**

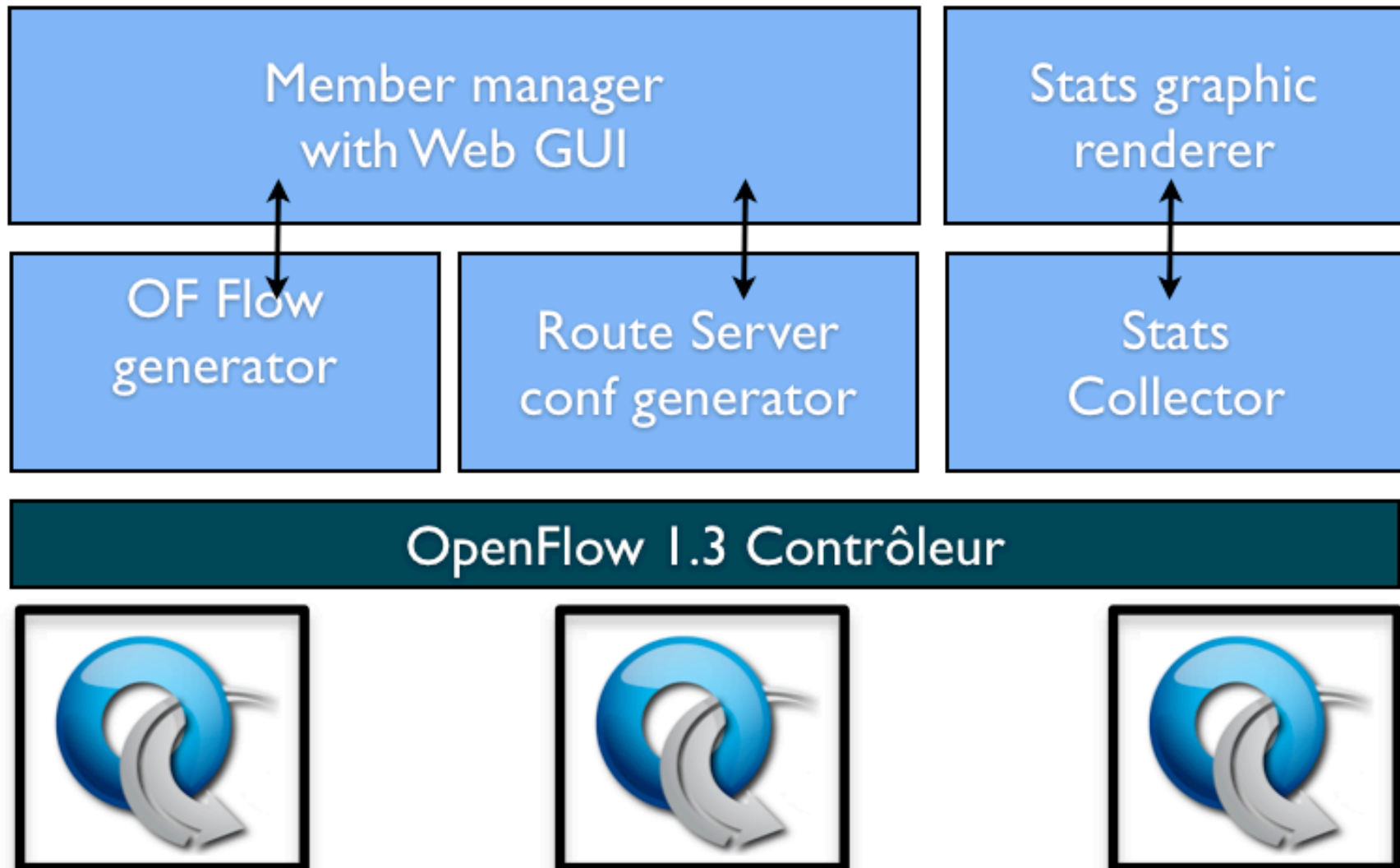


A Solid Fabric

- ✓ No incident reported
- ✓ No more broadcast
- ✓ Simplification

- ▶ TouIX
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TouSIX-Manager architecture



Let's see it live

- ✓ The traffic monitoring
- ✓ The BIRD and OpenFlow rule manager
- ✓ OpenFlow tables

Welcome to join

All the code could be found here

<https://github.com/umbrella-fabric/TouSIX-Manager>

▶ TouIX

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▶ What's next

What's next

- ➡ Umbrella fabric integrated in IXP-Manager ?
- ➡ A Workshop at the next EURO-IX !?
- ➡ Need to have it validated on a variety of OpenFlow switch !

A new Phd student

- All ToulX member are paying for the 3 years of the Remy's Phd
- All Uses cases are strongly applied research



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<http://www.h2020-endeavour.eu>





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