Migration Bnix 2016

a technical view

bnix
The Belgian National Internet eXchange

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Agenda

- **Old Bnix**
  - Architecture and why we needed to change
- **New Bnix**
  - Architecture, supplier, advantages
- **Migration: how to proceed**

Old Bnix

The old BNIX consists of:

cs1.brueve.bnix.net (Force10/Dell E1200i)

cs1.bruzav.bnix.net (Force10/Dell E1200i)

as1.brueve.bnix.net (Cisco 4948)

as1.brudie.bnix.net (Cisco 4948)

as1.bruzav.bnix.net (Cisco 4948)

as2.bruzav.bnix.net (Cisco 4948)

Old Bnix

Level3

LCL

As1.brudie — 2x 1Gbps LAGG — As1.brueve

Force 10
Brueve

7x 10Gbps

Force 10
Bruzav

End of support/life: hard to get adequate support on the Force10

Not scalable

LCL limited at 100Mbps UTP

No support for 100Gbps

Force10 and Cisco: tricks needed for interoperability

Some connections were tricky: via fiber converters or even optical

…

Interxion

As1.bruzav — 2x 1Gbps LAGG — As2.bruzav
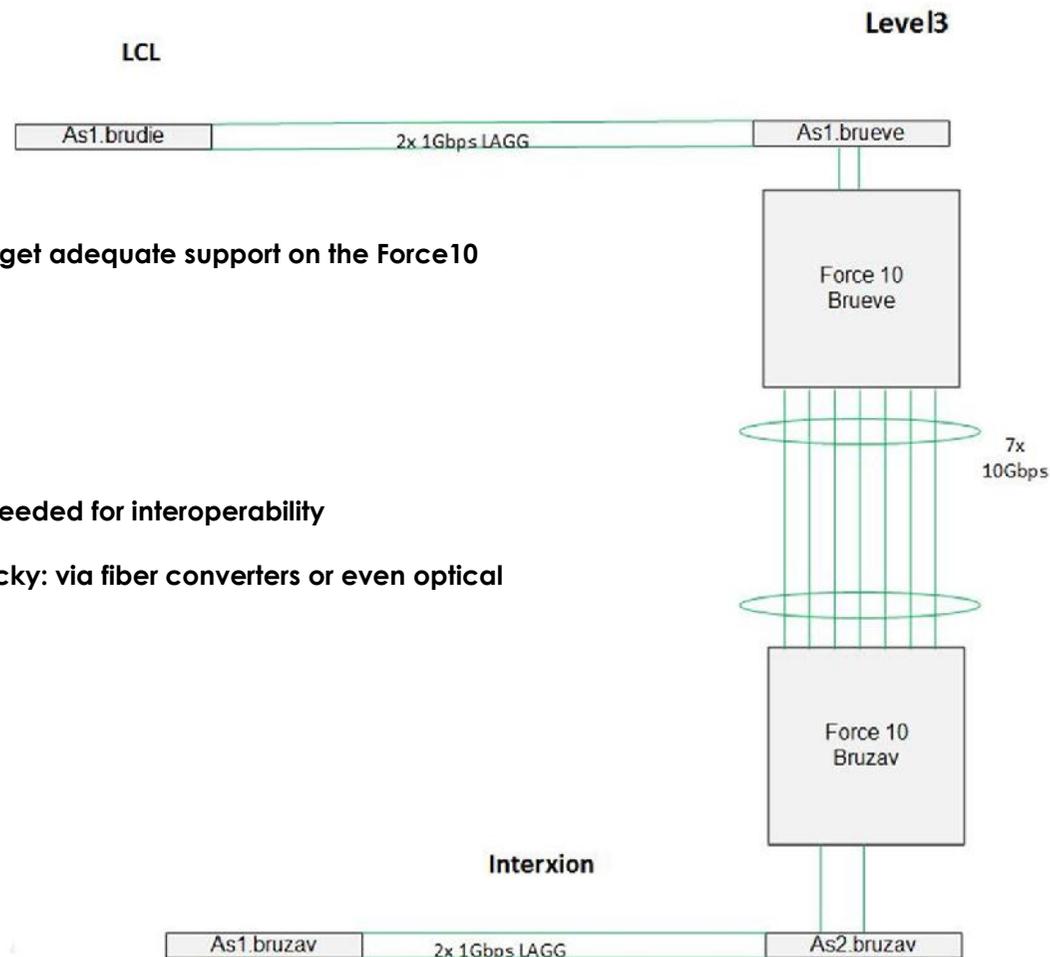
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New BNIX

The new BNIX consists of:

- Juniper EX4300 LCL and Interxion

- Juniper EX9214 Level3 and Interxion

- More or less a copy of the old platform
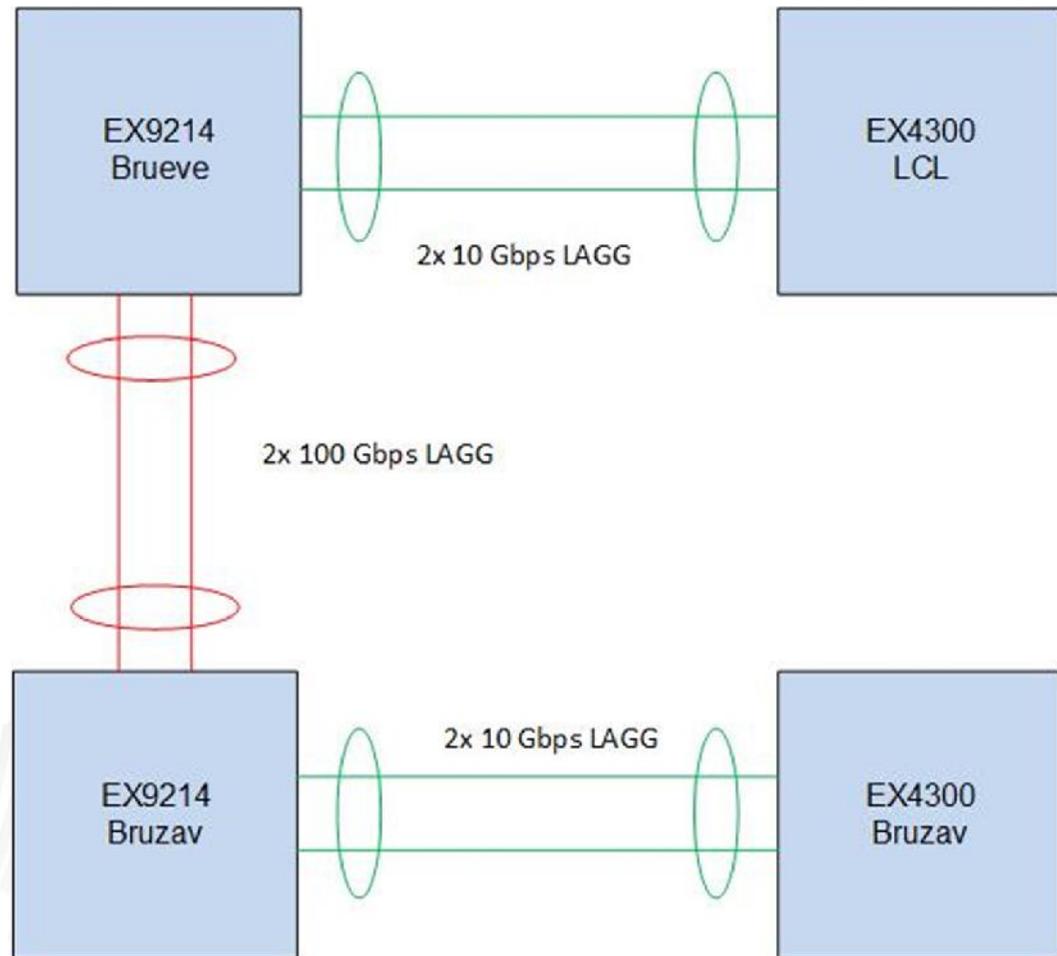
- Pure Layer2

New BNIX

New supported chassis

Scalable

1 supplier Juniper, 1 cli and no tricks needed

More flavors available:
**10Gbps SR, 100Gbps, 1Gbps in LCL**

More energy efficient

Soon an extra 100Gbps in the LAGG

EX9214
Brueve

2x 10 Gbps LAGG

EX4300
LCL

2x 100 Gbps LAGG

EX9214
Bruzav

2x 10 Gbps LAGG

EX4300
Bruzav

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Migration: How to proceed

- **Build the architecture and translate cli to Juniper**
  - Limit broadcast traffic
  - RSTP instead of MSTP
  - Mac limit
  - ...

- **Physical Installation, patching and Management.**

- **Interconnect the old and new platform via 1 trunk (tricky…)**

- **Perform the necessary test to ensure complete layer2 transparency between the old and new platform.**
  - Ping tests within the Quarantine VLAN across the old and new platform
  - Ping tests within the Peering VLAN

- **Allocate all customers to a port and prepare config and patching towards MMR**

- **POC: BNIX connection of Belnet. Lessons learned: check MTU!**

Migration: How to proceed
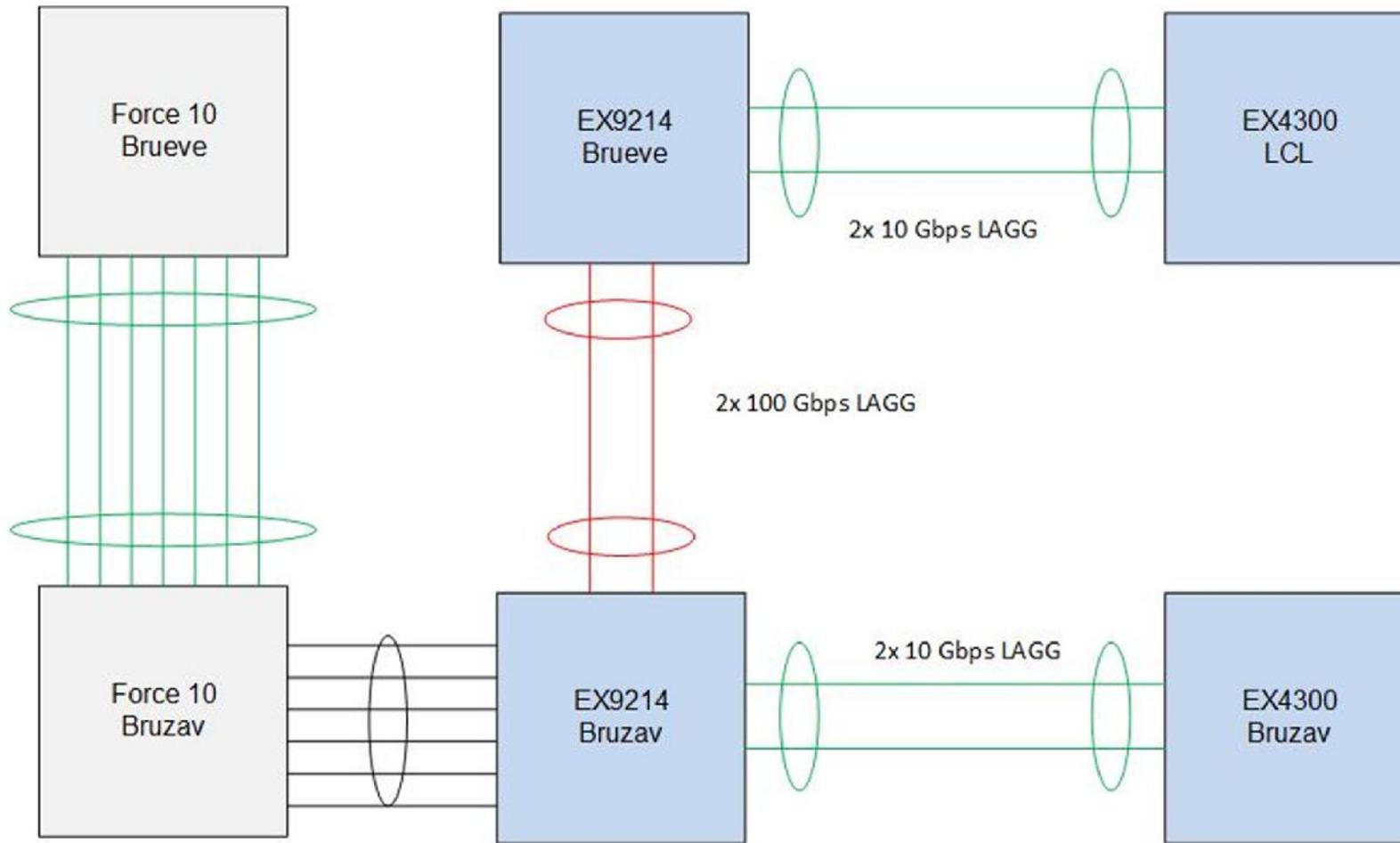
Migration: How to proceed

- **All was prepared to minimize downtime**

- **Config was ready, patches as well**

- **Three nights of changing cables towards the MMR**

- **Problems encountered:**

  - Playing with auto-neg settings

  - Port security, MAC address spoofed

  - Some participants send STP bpdu's

  - You have 25% chance that RX/TX is correct on the first try…

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New Platform

- 100Gbps and 40Gbps available

- Better support and well known (standard) cli

- EX9218 can switch 13,2 Tbps at 8000Watt (Force10 had the max of 3,5Tbps at 7000Watt)

- Easy to extend the platform