NIX.CZ topology migration

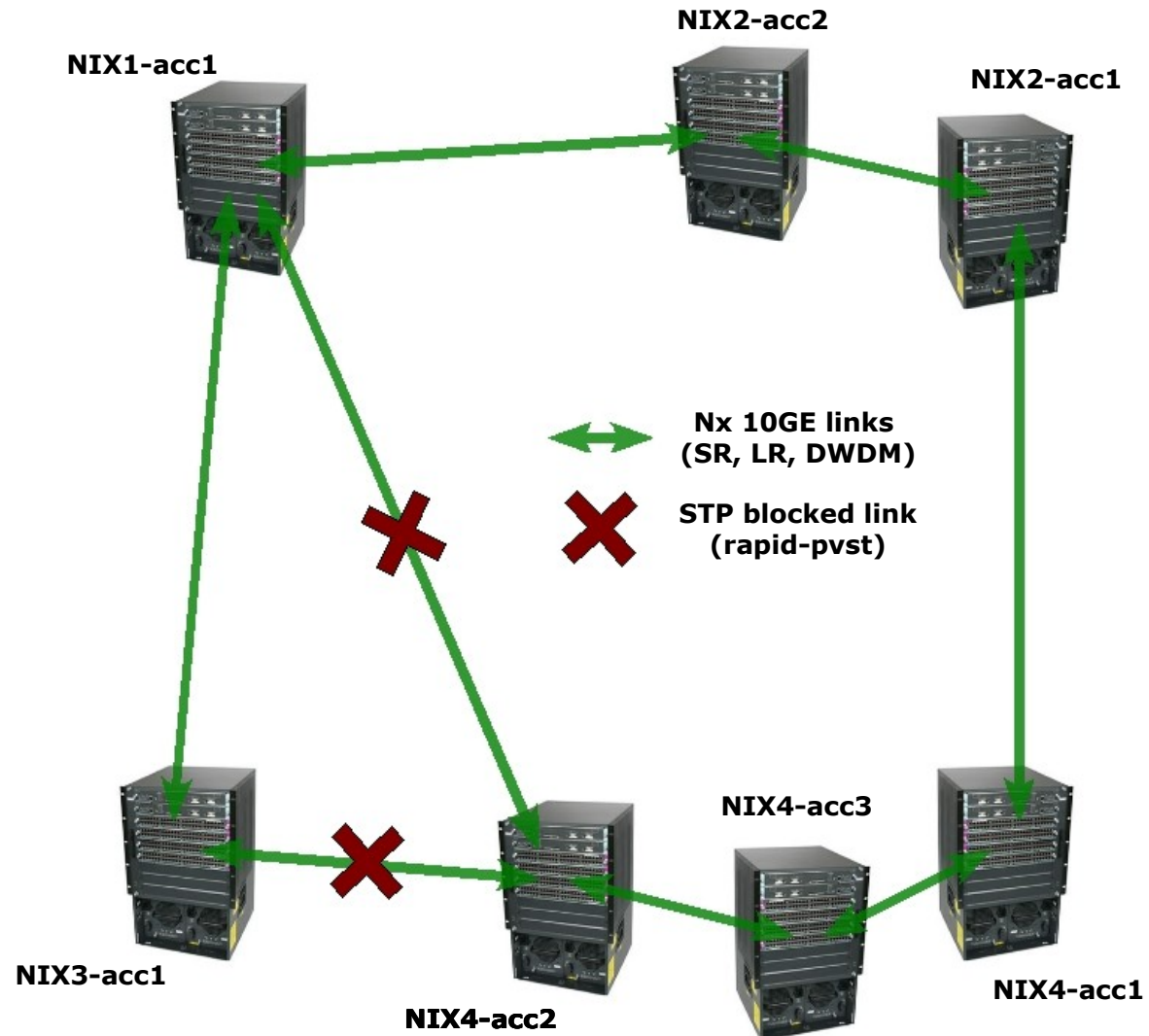**Petr Jiran
Technical Manager at NIX.CZ
pj@nix.cz**

**RIPE 61 EIX WG
18/11/2010, Rome, Italy**

NIX.CZ now

- 4 locations in Prague

- Virtualized dual-star L2 infrastructure

- 7x Cisco 6509E - access switches

- 2x Cisco Nexus 7010 - core switches

- Cisco ONS 15216 - DWDM system

- 82 members

- 21 custommers

- 6 TLDs hosting servers

- 164 connected ports

- 653 Gbps connected capacity

- 155 Gbps peak traffic
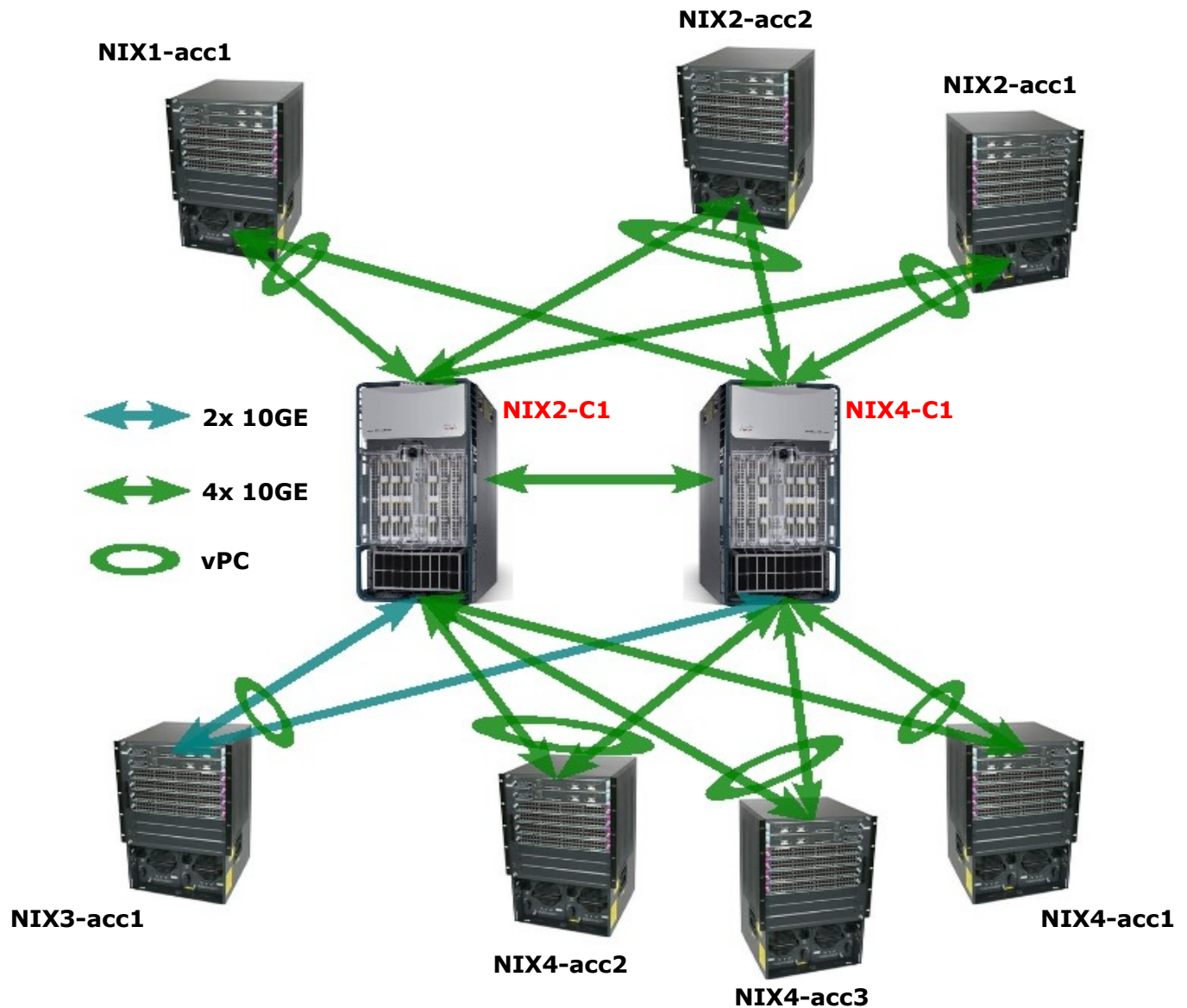
- 351 Mbps IPv6 peak traffic

Old ring topology

Migration motivation

- About 42% of ports used for core links

- Problems with connecting new switches or locations

- Spanning-tree blocked lines were not used

- Port-channel hash distribution algorithm

Our needs and solutions

- Building intelligent network without some out of band
  management system

- Building active and virtualized topology with best
  performance

- Backward compatibility persistens

- Implementing with minimum traffic outage

- Better expansion possibility

- Implementation of new core switches Nexus 7010

- Moving to virtualized dual-star topology (vPC)

New topology

Upgrade procedure

- About 1/2 of a year of pre-arrangements

- Core switch tender
(Arista, Brocade, Cisco, Extreme, Force10, HP, Juniper)

- Core switch lab testings
(Brocade, Cisco, Force10 and HP)

- Housing optimization (Nexus is huge)

- 3 nights of reconfigurations and reconnections

- Traffic outage only by STP topology change

- No peer BGP session went down

- 2 HW pronlems with X2 and Nexus line card

Thanks all for great cooperation :-)

Future plans

- IPv4 peering segment re-addressation from /24 to /22

- Network evolution for future traffic growth

- Routeserver development (BIRD and Quagga)

- New IPv4/6 feature tests (HSRP, Multicast, Mobile, ...)

- New hardware tests (40G / 100G interfaces)

- New feature tests (OTV, VPLS, TRILL, TrustSec)

Thank you!

? Questions ?

pj@nix.cz
ipv6@nix.cz