Extended communities on RS

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NIX.CZ

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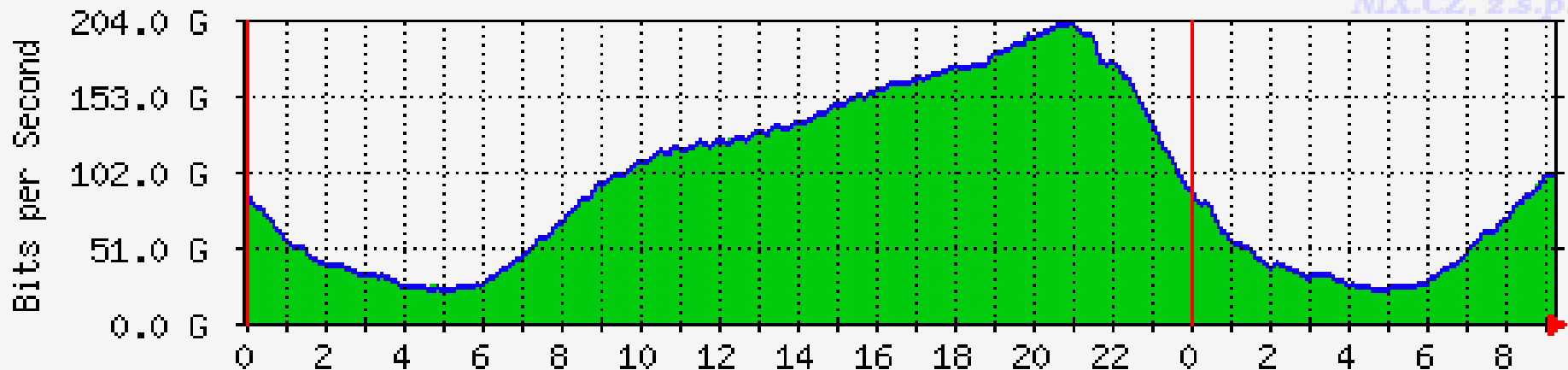
NIX.CZ is 15!

- You are welcome!!!
- November 21, 2011
- Planetarium, historic tram, party, ...
- Contact us if you're interested to come

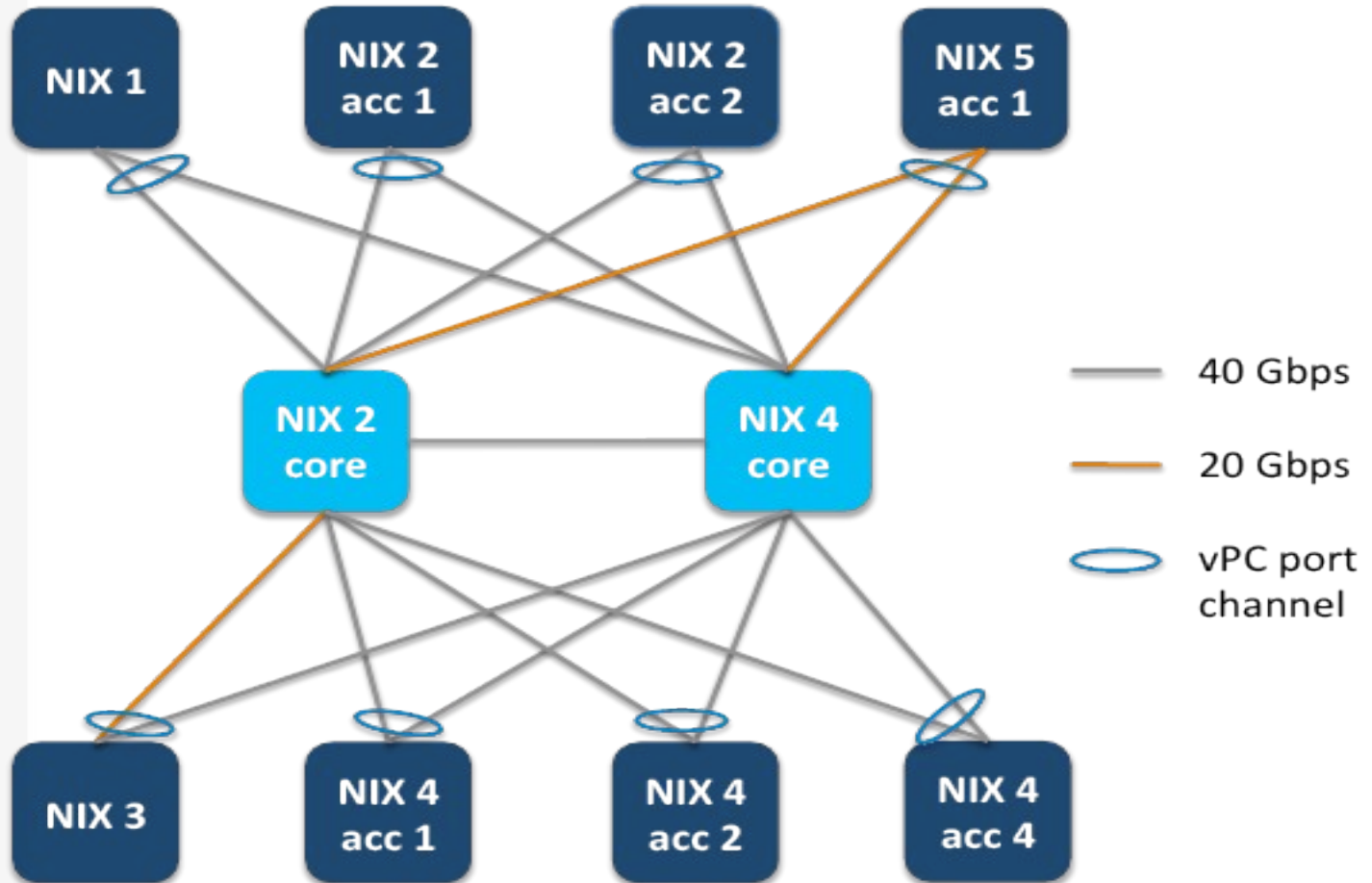# NIX.CZ update

- 200 Gbps reached!
- A lot of new customers/ports
- New POP opened – 5 POPs
- Price list simplification and price reduction plan for 2012
- Switch upgrades – Cisco Nexus also used as an access switch

NIX.CZ update

ASN32

- ➲ Current RS policy based on standard BGP communities
- ➲ 16 bits only
- ➲ New members with ASN32
  - ⑤ They can filter others
  - ⑤ But they cannot be filtered

Current RS policy

Evaluation order	Community	Action
1	0:<peer-as>	Do not advertise to <peer-as>
2	47200:<peer-as>	Advertise to <peer-as>
3	0:47200	Do not advertise to any peer
4	47200:47200	Advertise to all peers

Extended community

- RFC 4360
- 48 bits for ASNs (16+32)
- Plus some signalling bits
- More types – route origin/route target
- AS number or IP address

New RS policy

Eval. order	Community	Action
1	0:\<peer-as\> or So:0:\<peer-as\>	Do not advertise to \<peer-as\>
2	47200:\<peer-as\> or So:47200:\<peer-as\>	Advertise to \<peer-as\>
3	0:47200 or So:0:47200	Do not advertise to any peer
4	47200:47200 or So:47200:47200	Advertise to all peers

New RS policy

- ⮑ Conditions evaluated in fixed order (1-4)
- ⮑ You can mix both – not recommended
- ⮑ 'OR' clause applied
- ⮑ All (extended) communities containing '47200:' or '0:' removed by route server

So:0.0.0.0:<peer-as>

- ➲ Some Cisco CRS boxes cannot generate So:0:<ASN32>
- ➲ RFC not very clear on that
- ➲ Those members propagate So:0.0.0.0:<ASN16> instead
- ➲ Cannot 'block' any peer
- ➲ Peers can be only included
- ➲ Example:
    - ⑤ So:47200:peer1
       So:47200:peer2
       So:47200:peer3
       So:0.0.0.0:47200

NIX.CZ Route Servers

- ⮑ Two route servers
- ⮑ BIRD & Quagga – implemented on both
- ⮑ Problems with Quagga – communities removal, reconfiguration, filtering etc.

BIRD

- ➲ Extended communities introduced in 1.3.3
- ➲ New release 1.3.4 – bugfix release - recommended
- ➲ Tested and run at NIX.CZ
- ➲ RS configuration templates to be published soon
- ➲ Other new features – 'include', BGP TTL security, OSPF NSSA, static recursive routes

Conclusion

- Extended communities used for RS policy at NIX.CZ
- ASN32 fully supported
- Problems with Cisco – reported – we can change the policy
- BIRD works
- Quagga sort of works :-(
- OpenBPGd untested yes

Questions ?

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