



# NIX.CZ, NIX.SK and project FENIX

Martin Semrad

SEE 5  
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NIX.CZ

20 YEARS

# NIX.CZ introduction

- Open non-profit association
- Founded in 1996
- Neutral peering platforms
- Czech Republic and Slovakia
- Euro-IX member



# Current status

- 139 networks
- 44 international
- 428 Gbps
- Functional community
- Co-operation in region

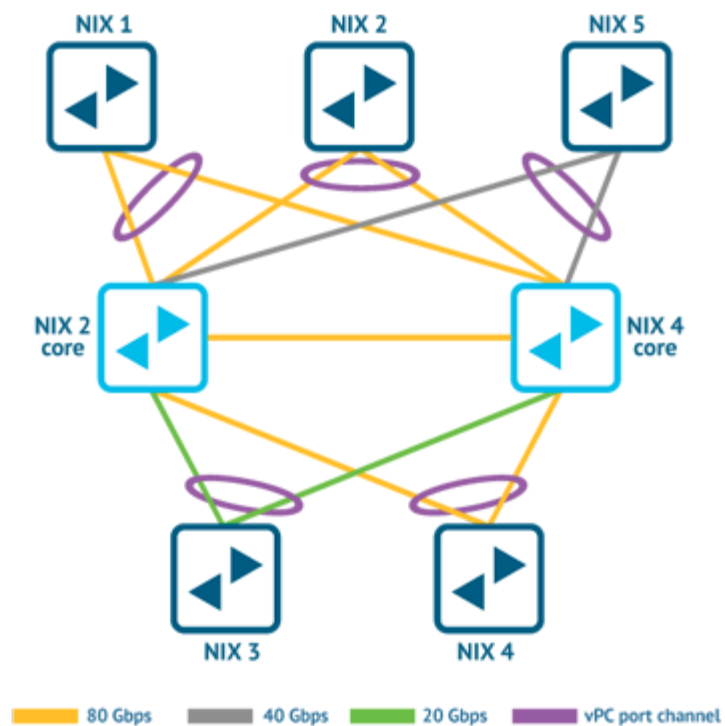


# Co-operation

- Peering Days – with BIX and VIX  
– 4<sup>th</sup> in Budapest 30-31 / 3
- Montenegro – start of new IXP in Podgorica



# Topology NIX.CZ 2016



# NIX.SK

- Started March 2015
- 31 networks
- Building community
- Keep local traffic local
- Geographic redundancy

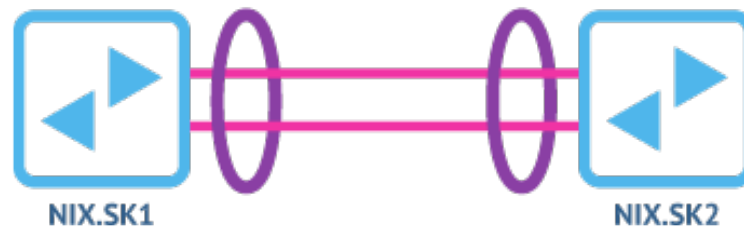


# NIX.SK

- 2 PoPs
- Only one IXP with geo redundancy
- 1<sup>st</sup> public DNS ROOT in SK
- Not interconnected with Prague



# Topology NIX.SK 2016





# FENIX

- Reaction to DOS attacks in 3/2013  
4 days long
- Multiple CZ targets  
media, banks, cell phone operators, Seznam.cz (CZ “Google”)
- Source of attacks out of CZ
- Nothing from CZ
- Through upstream and NIX.CZ
- No response source



# FENIX

- Club of “trustworthy” companies
- Technical tool “Secure VLAN”
- Eyeballs can connect to local content  
home banking, media, email ...
- Island mode  
last resort
- Faster than regulations
- High joining criteria



# FENIX

## start

- 6 founding companies – January 2014
  - Active 24
  - CESNET (NREN)
  - CZ.NIC
  - Dial Telecom
  - O2 Czech Republic (incumbent operator)
  - Seznam.cz
- NIX.CZ supervisor over rules



# FENIX

## organization rules

- End user terms and conditions  
spam, attacks
- 24x7 technical conditions  
no IVR
- CSIRT team  
listed by Trusted Introducer, Terena
- Active participation
- Recommendation from 2 members, no veto



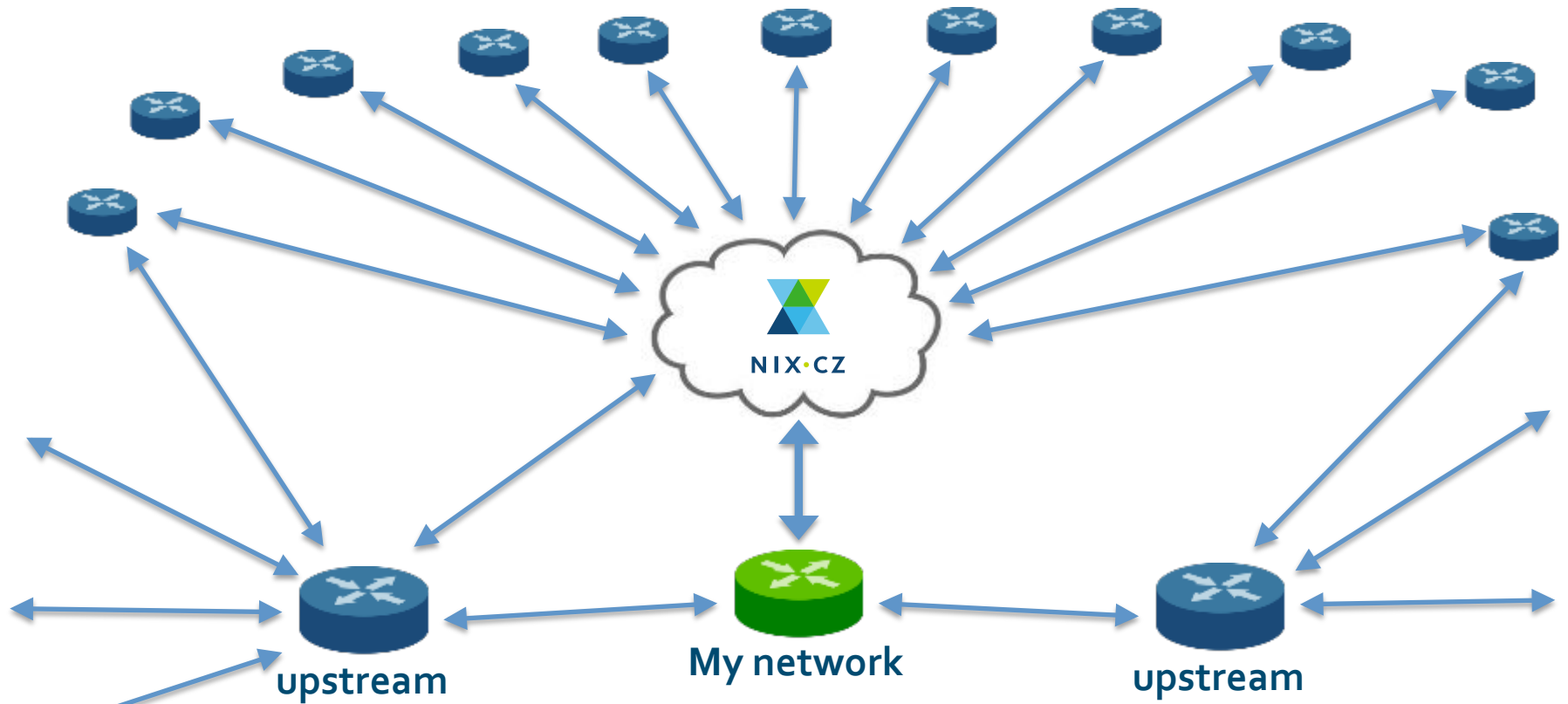
# FENIX

## technical rules

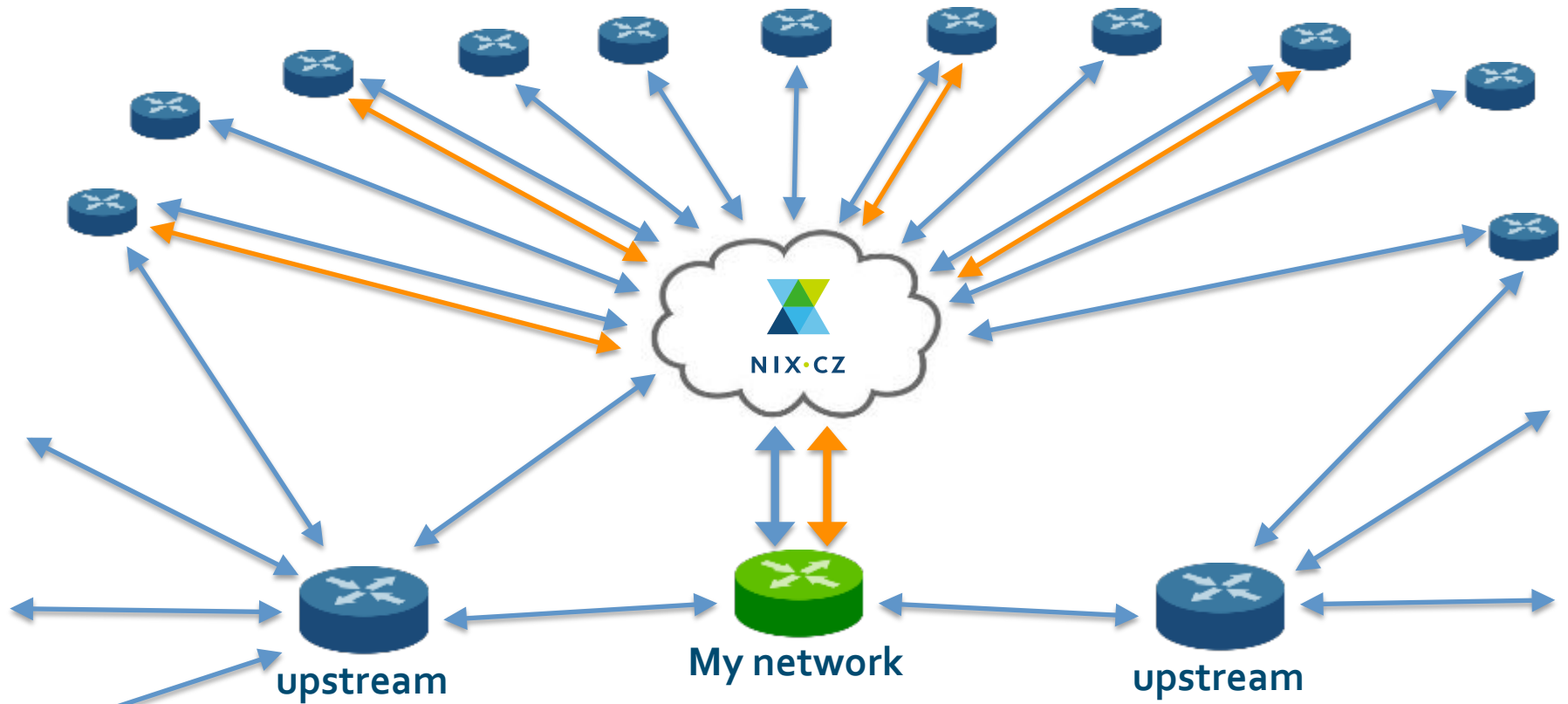
- BCP-38/SACoo4 – granularity /24 (/48)
- RTBH filtering using RS
- IPv6, DNSSEC
- Full redundancy on NIX.CZ
- Network monitoring (MRTG, NetFlow, ...)
- Control plane policy RFC6192
- DNS, NTP, SNMP amplification protection
- Security incident time <30min
- BGP – TCP MD5



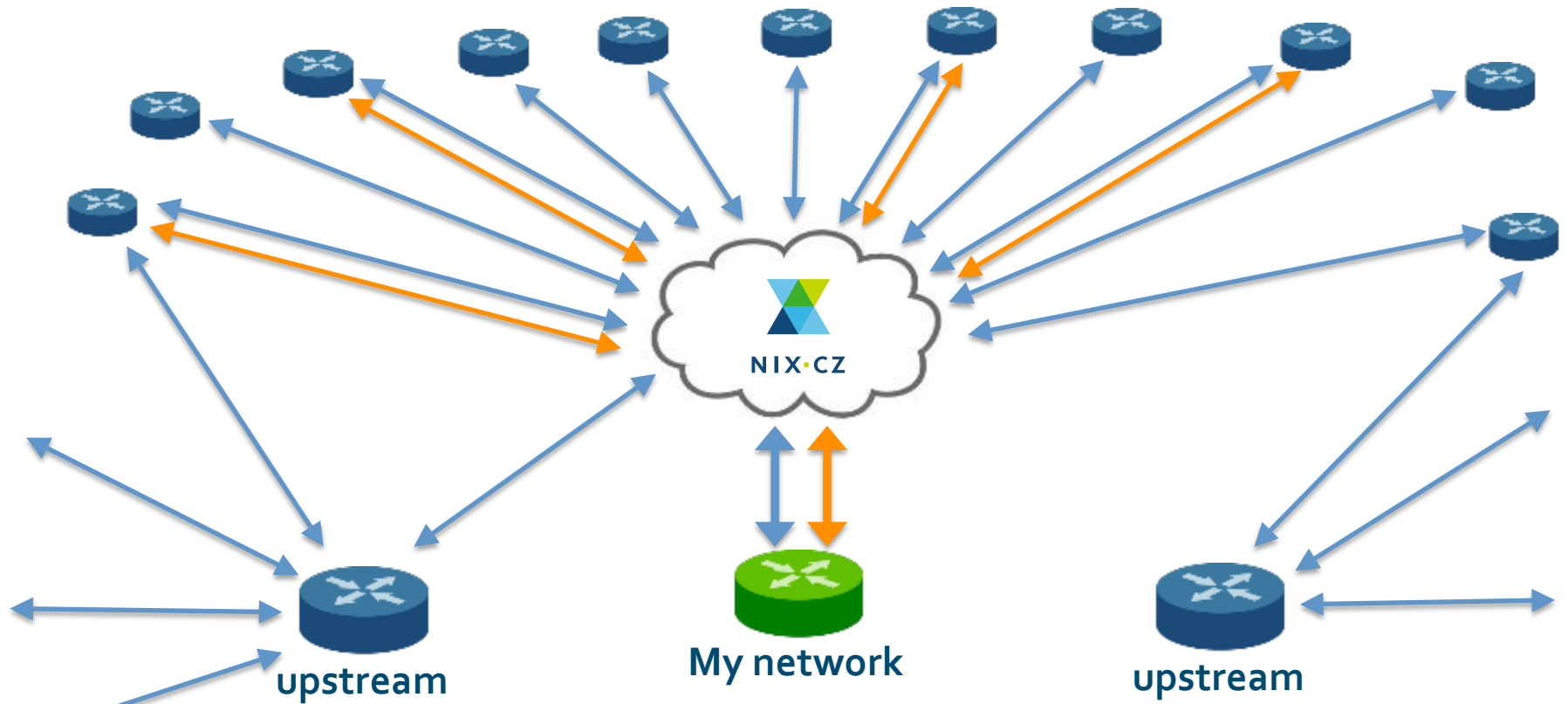
# How it works



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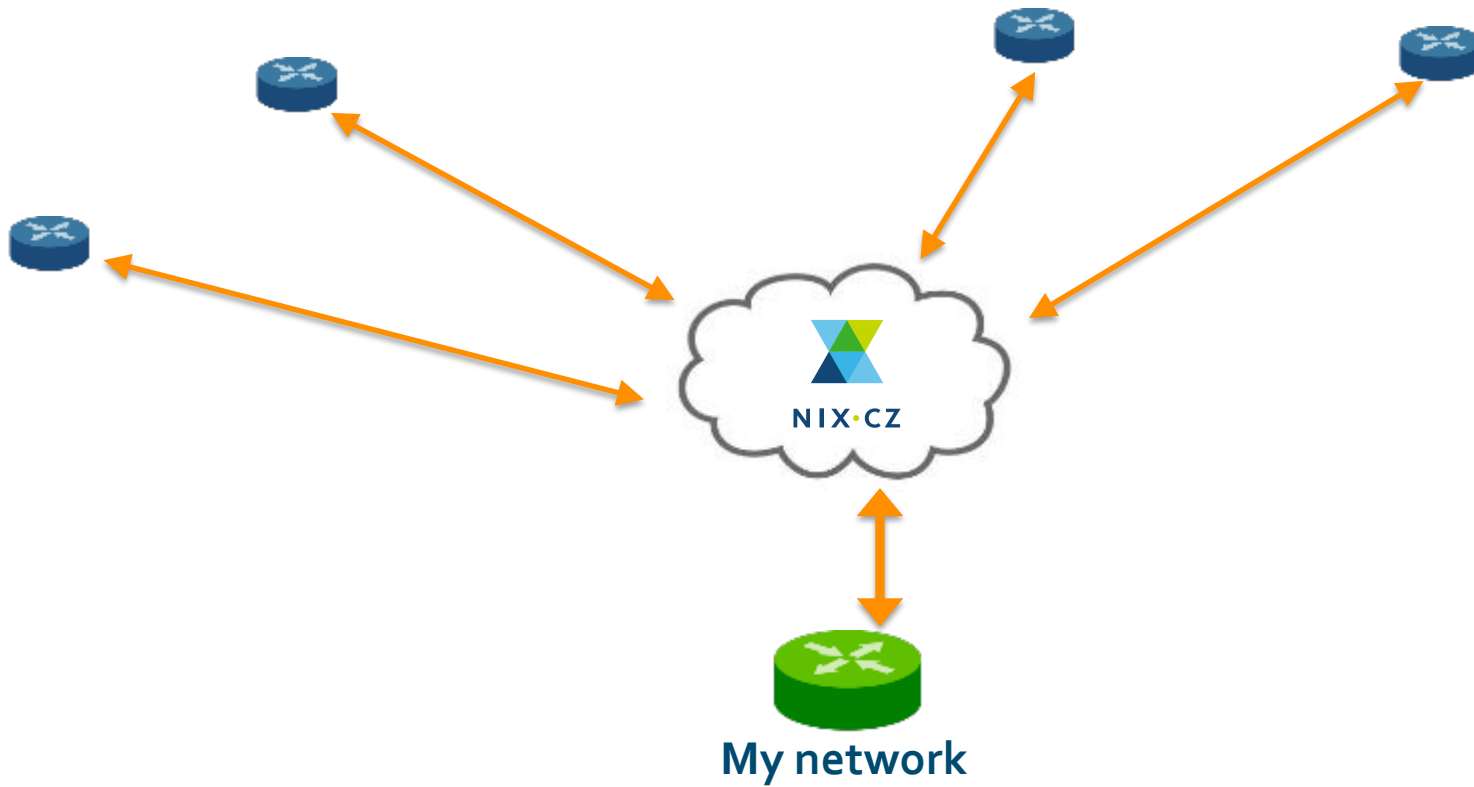


# How it works





# How it works



# FENIX

## Slovakia

- Started discussions in Slovakia
- MoU with CSIRT.SK
- Next working group May/June





Save the date:

**24<sup>th</sup> November 2016**

20 years anniversary  
event in Prague



# Follow us



.. and at [www.nix.cz](http://www.nix.cz) / [www.nix.sk](http://www.nix.sk) 😊



# Questions?

