

Euro-IX IXP Large BGP Communities

<https://www.euro-ix.net>



ABOUT ▾ FOR IXPS ▾ SUPPORT IXPS ▾ FOR NETWORKS ▾

Large BGP Communities

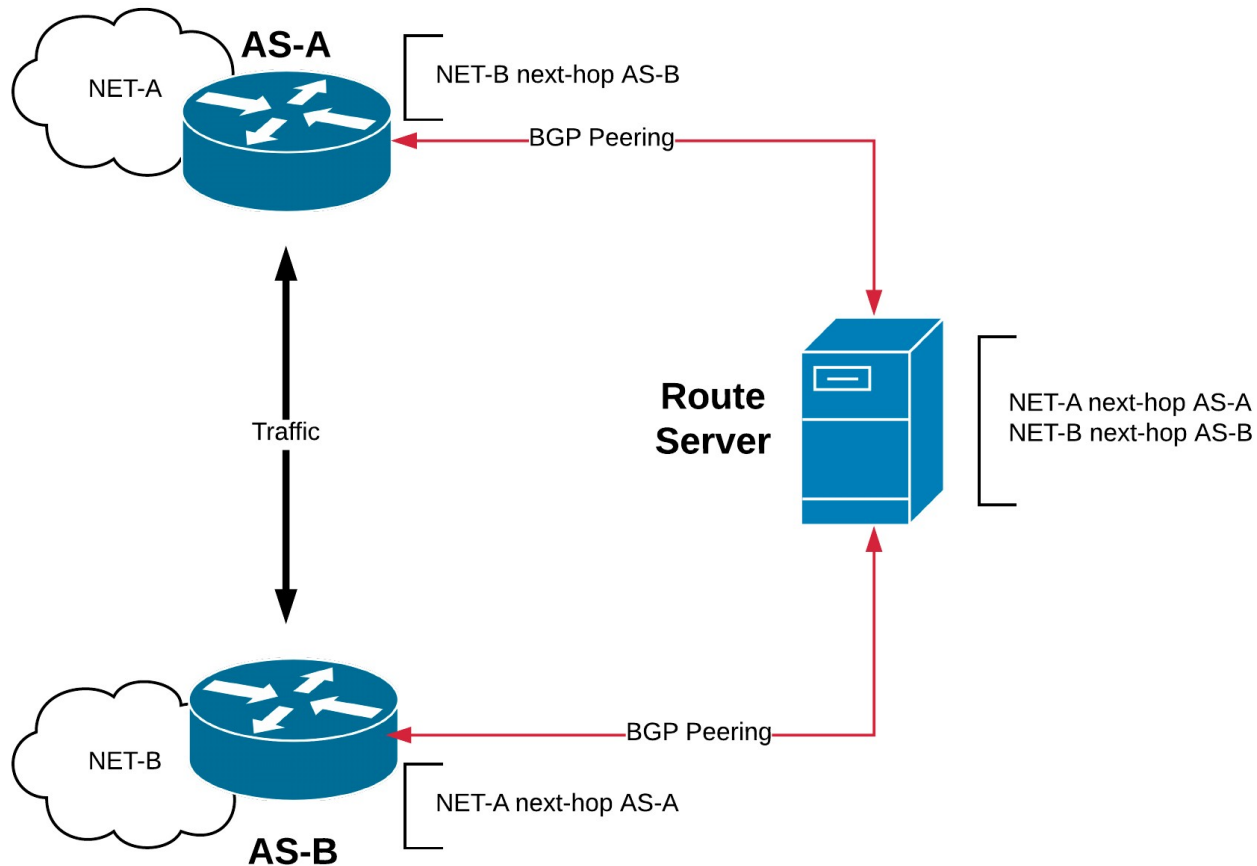
- Join Euro-IX >
- Set up an IXP >
- IXP Wishlist
- Large BGP Communities

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Neutral Peering Days 2018

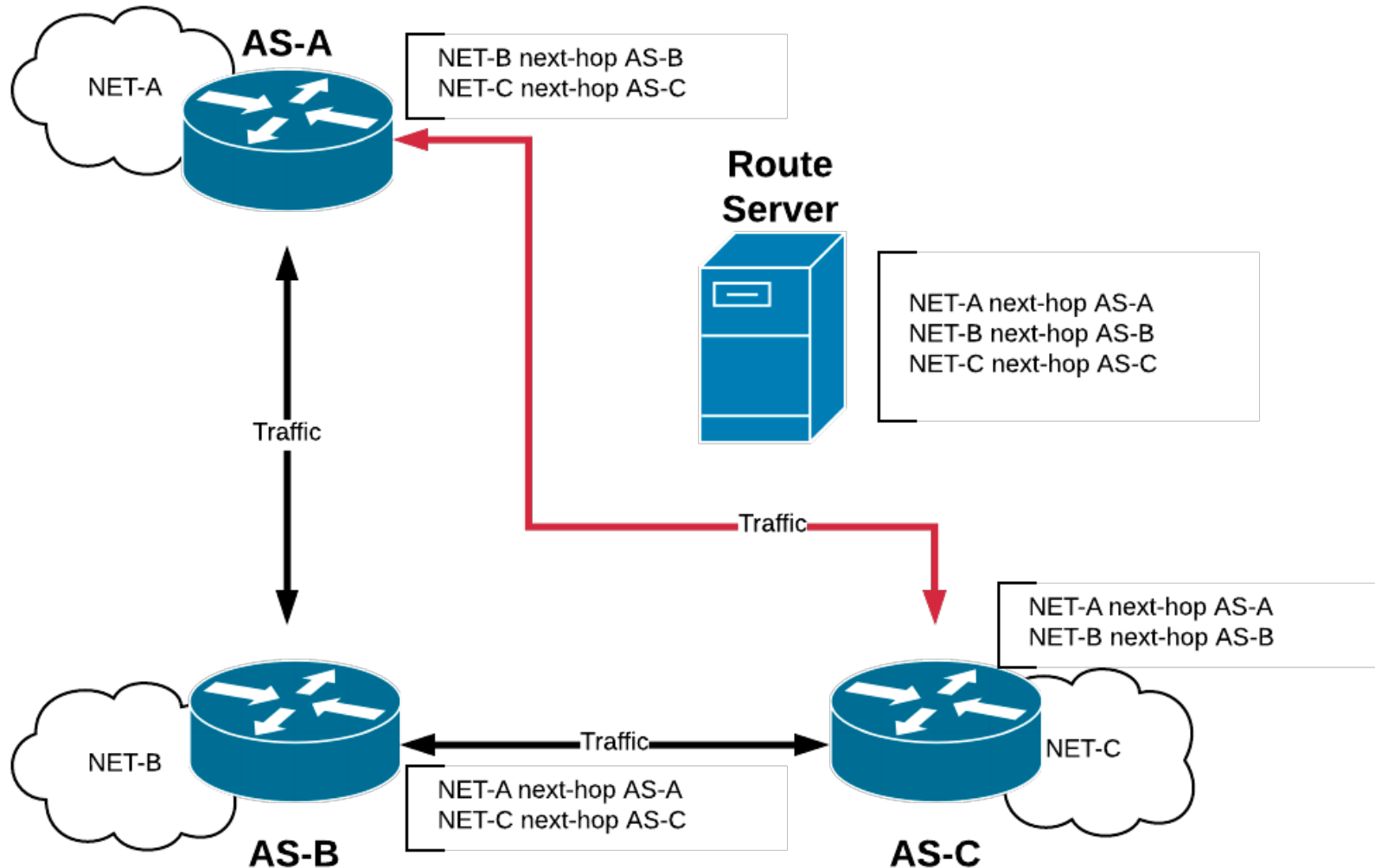
IXP Route Servers

- Central route aggregator
- Does NOT add it's own next hop!



Route Server Problem

- AS-A does NOT want traffic from AS-C!



Solutions

- Only use private peerings (No RS)
 - Lots of peers to manage
- Drop traffic from AS-C
 - Black holing is not nice!
- Ask AS-C nicely to filter out your routes
 - Hope that they actually do it
- **Ask the IXP to not send your routes to AS-C?**
 - A RS is an IXP service after all?

Route Server Signaling

- Out-of-Band signaling
 - Email
 - IXP web-portal/API
 - RPSL
- In-band signaling (using BGP directly)
 - **BGP Communities**
 - Easy and per individual route!

IXP communities

- Current de facto standard?
 - 0:RSASN DO NOT announce to *
 - 0:ASN DO NOT announce to ASN
 - RSASN:PeerASN DO announce to ASN
- ECIX communities
 - 65000:0 DO NOT announce to *
 - 65000:ASN DO NOT announce to ASN
 - 64960:ASN DO announce to ASN
 - 65001:ASN Prepend 1x to ASN
 - 65020:ms DO NOT announce to peer >= ms
 - 65021:ms Prepend 1x to peers >= ms
 - ??????:?? What to use for some future usage?

Large BGP communities

- RFC 8092 (BGP Large Communities Attribute)
- RFC 8195 (Use of BGP Large Communities)
- 3x **32b** (X:X:X) space
- ASN:Function:Parameter
^ basically what we want!

Opportunity

- Define Functions & Parameters
- Agree on them!
- Leave space for experimentation

IXP Large BGP communities

- <https://www.euro-ix.net>

The logo for Euro-IX, featuring the text "euro-IX" in a blue, lowercase, sans-serif font. The "e" is lowercase, while "uro-IX" is in all caps.

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IXP Large BGP communities

- Standardize LBGP communities at IXPs
- RS:0-999:* Action Communities
 - RS:0-99:* Direct Filtering
 - RS:100-199:* AS Path prepending
 - RS:900-999:* IXP Specific
- RS:1000-1999:* Informational Communities
 - RS:1000-1099:* Informational tags
 - RS:1100-1199:* Filtered reasons
 - RS:1900-1999:* IXP Specific

Operational communities

- Operational RS:0-999:*
 - RS:0:0 Do not advertise to *
 - RS:0:PEERAS Do not advertise to PEERAS
 - RS:1:PEERAS Advertise to PEERAS
 - RS:101:PEERAS Prepend to PEERAS once

Informational communities

- Example informational RS:1000-1099:*
 - RS:1000:1 RPKI VALID
 - RS:1000:2 RPKI UNKNOWN
 - RS:1001:1 IRRDB VALID
 - RS:1001:5 IRRDB INVALID ORIGIN AS
- Example filtered reasons RS:1100-1199:*
 - RS:1101:1 Prefix length too long
 - RS:1101:2 Prefix length too short
 - RS:1101:3 Bogon Prefix
 - RS:1102:1 Advertising peer declines prefix

IXP Large BGP communities

- No negative input from EURO-IX members
 - Multiple IXPs have shown interest
 - AMS-IX
 - DE-CIX (Already uses them!)
 - ECIX
 - JPNAP
 - LINX
 - LONAP
 - MSK-IX
 - NL-IX
 - And more!
- 1) Ask your IXP to use Large BGP Communities!
 - 2) Ask them to use the standard!

Peer input

- Good idea?
- Bad idea?
- Something missing?