



State of the IPv4 Address Market

Sunday, 15 January 2023



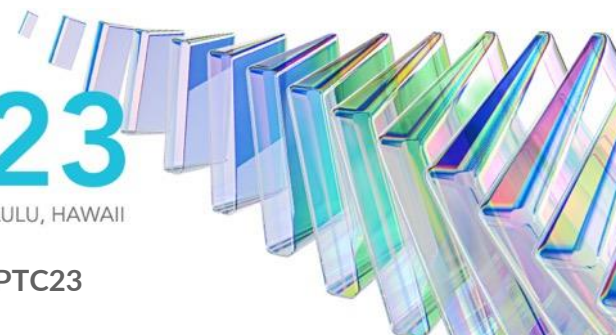
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Panelists

- Moderator: John Curran (ARIN)
- Panel:
 - Paul Wilson (APNIC)
 - Lee Howard (IPv4.Global by Hilco Streambank)
 - William Sylvester (Addrex)
 - John Sweeting (ARIN)



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Overview

- State of the RIR Transfer Policies & Related Statistics
- Transfer Market Size and Price Trends
- Things to Watch Out For with Transfers
- Q&A

APNIC Transfer Policies and Statistics

Paul Wilson
APNIC



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APNIC Transfer Policies

- “Market Transfers”
 - Prop-050 (2010) allows transfer of IPv4 addresses between APNIC members
 - Prop-095 (2011) allows inter-RIR transfers
 - Prop-107 (2014) allows transfer of AS numbers
 - Requires demonstration/justification of need
- Mergers and Acquisitions
 - Transfer due to a change in business structure such as a merger, acquisition, or reorganisation
- Historical Internet number resources
 - Transfer of historical IPv4 addresses and/or AS numbers from verified custodians
 - Demonstrated need is not required
 - Transferred resources become “current”



Market Transfers into APNIC (/24s)

Last 10 years IPv4 transfers into APNIC by end of December 2022



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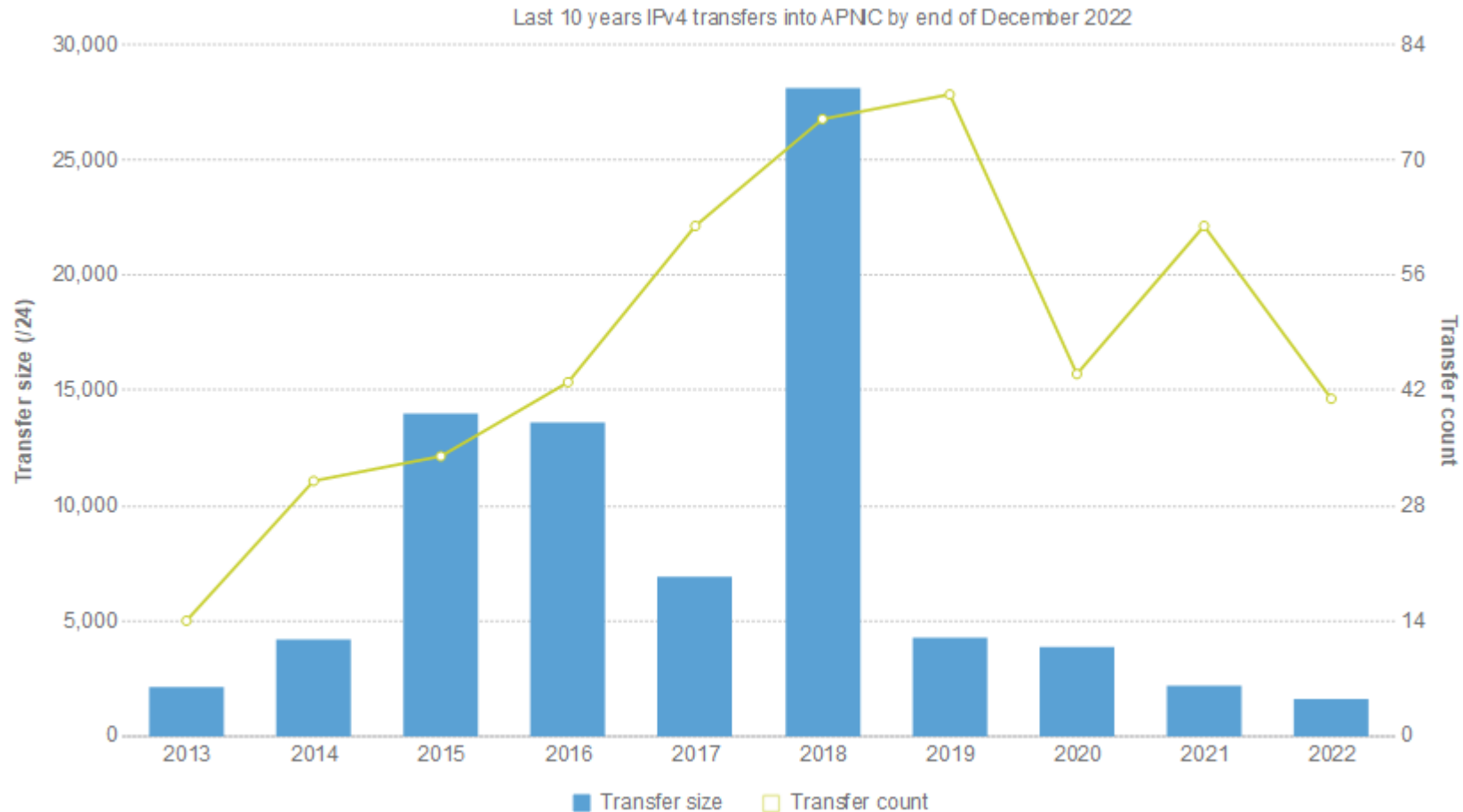
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Market Transfers into APNIC



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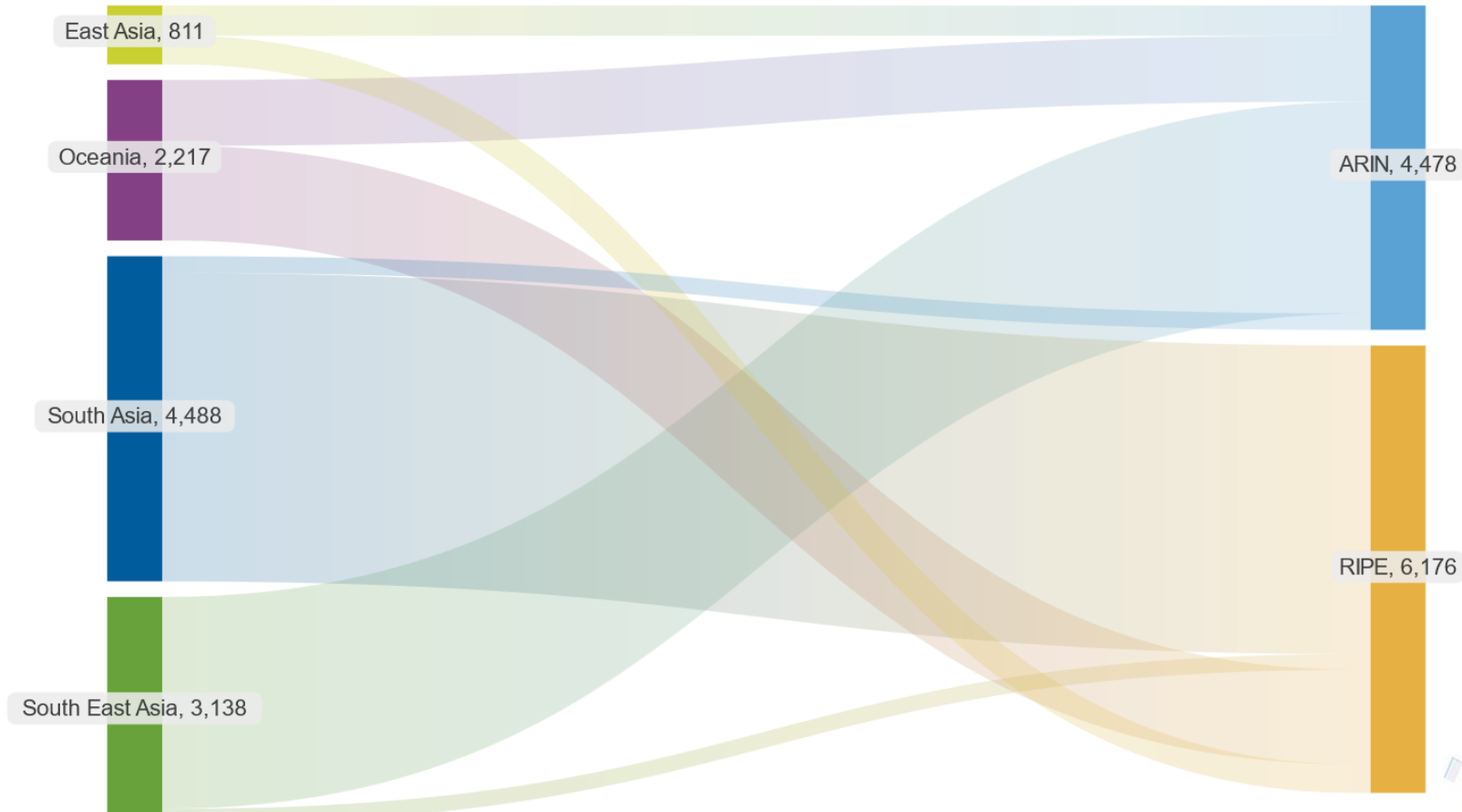
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Market Transfers from APNIC (/24s)

Last 10 years IPv4 transfers from APNIC by end of December 2022



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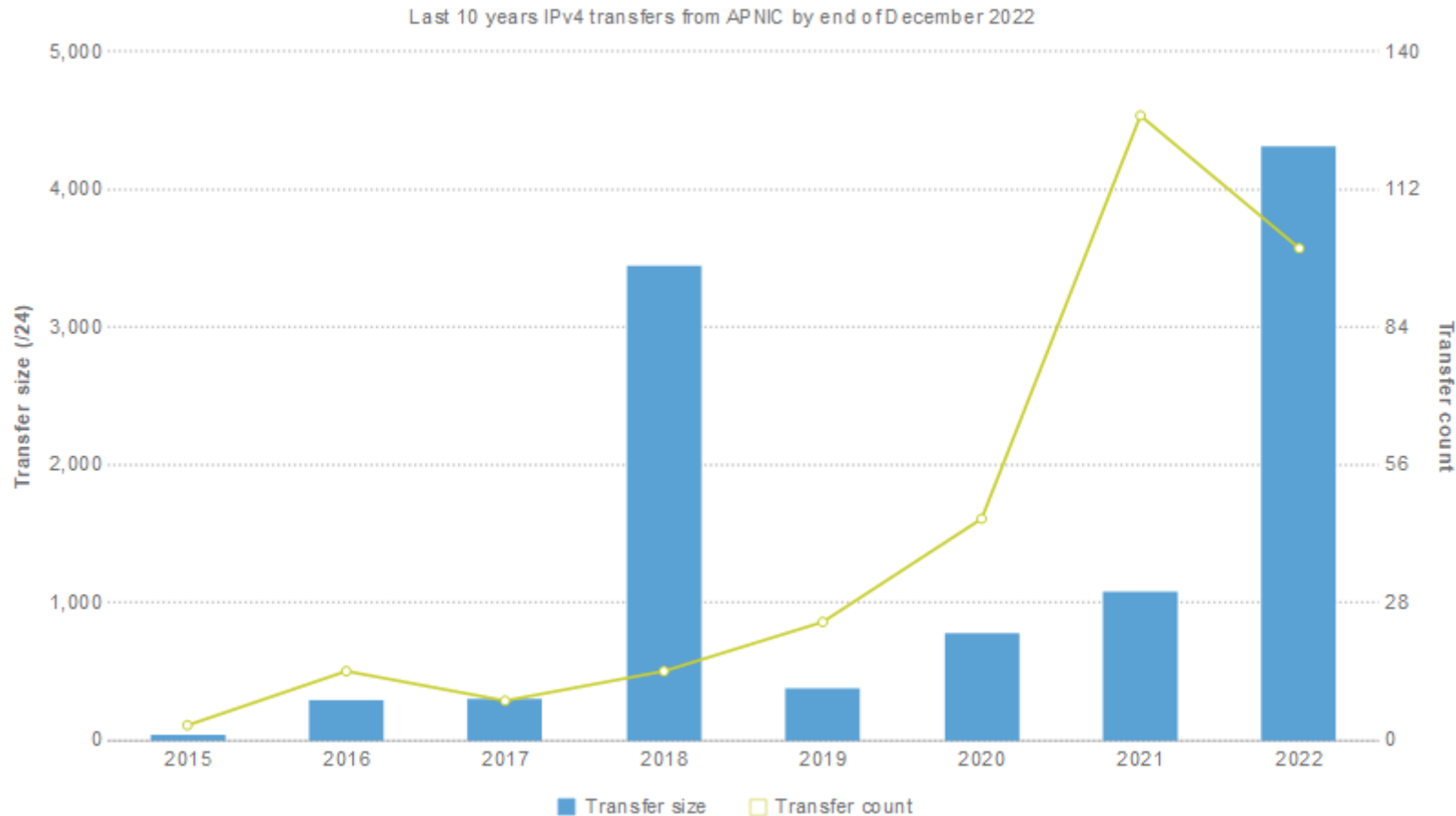
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Market Transfers from APNIC



Note: first outgoing transfer was in 2015



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Market Transfers within APNIC (/24s)

Last 10 years IPv4 transfers within APNIC by end of December 2022



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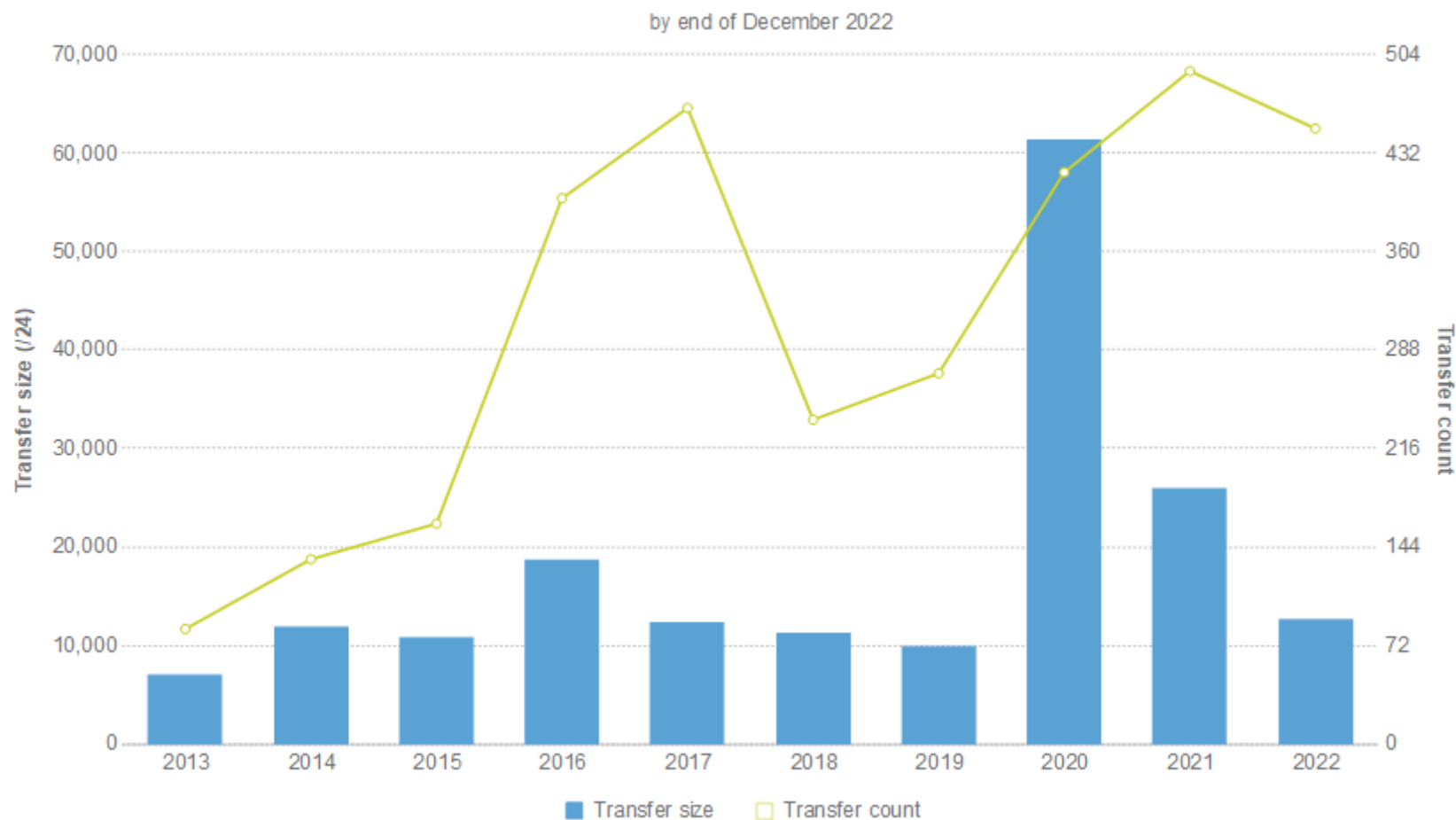
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Market Transfers within APNIC



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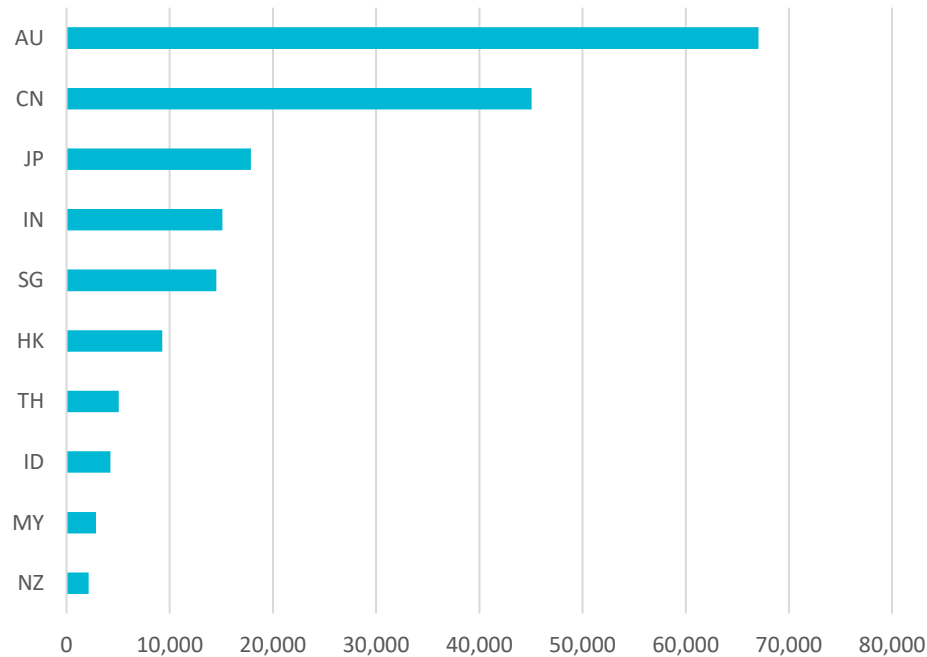


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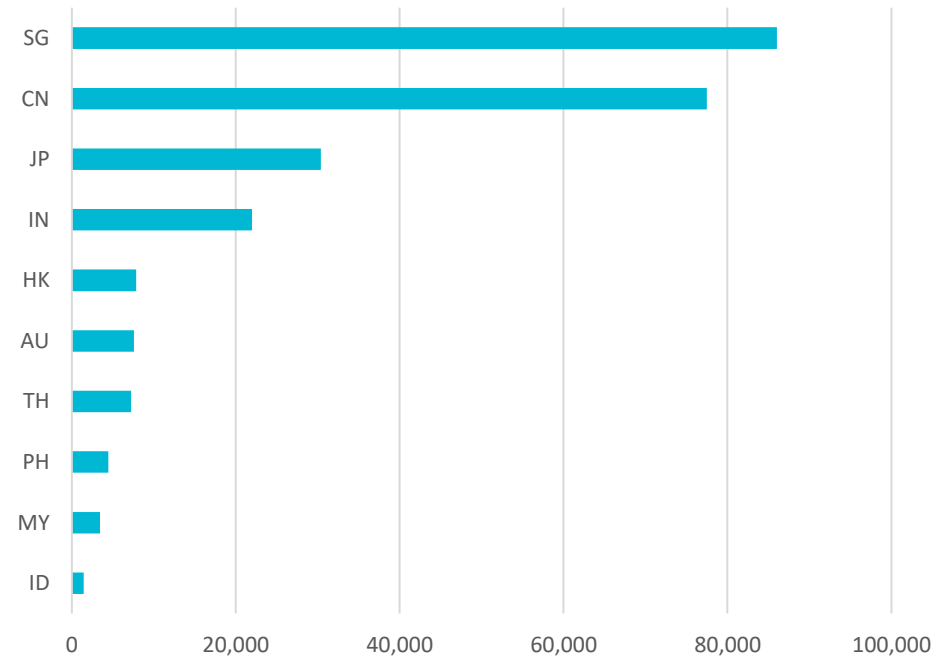
Market Transfers Top 10 Economies by Transfer Size

Last 10 years by end of December 2022

Top 10 Source



Top Recipient



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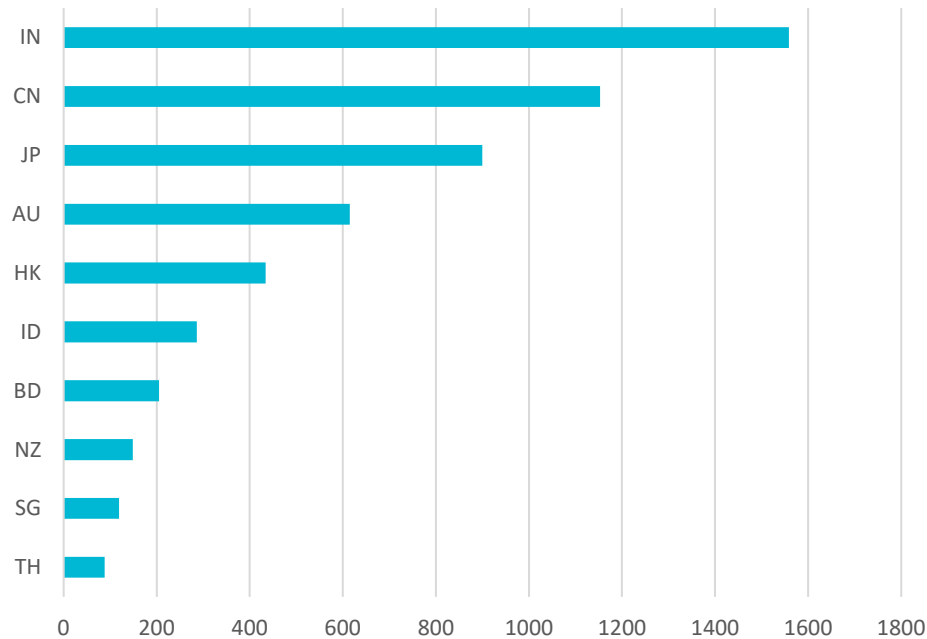


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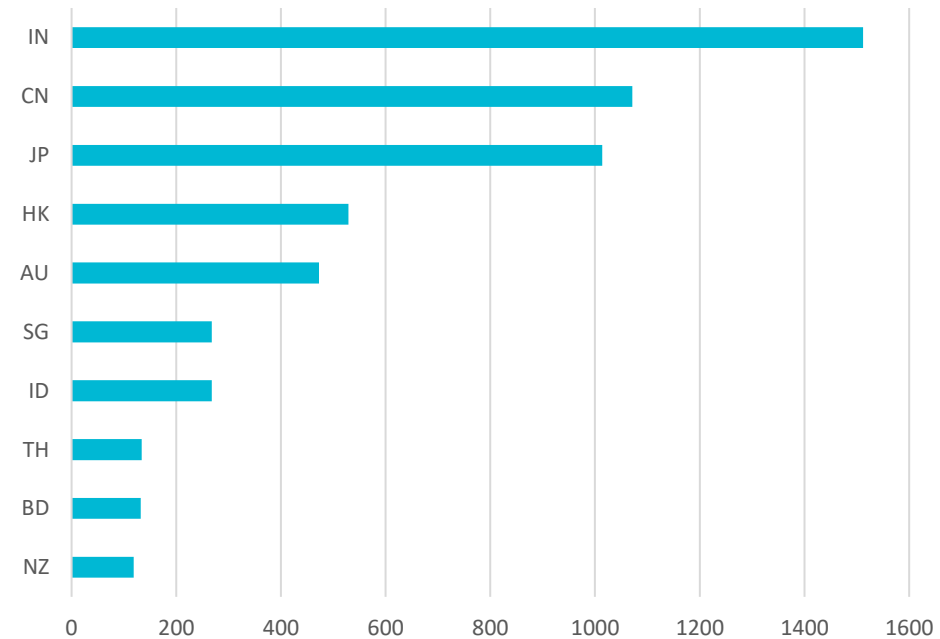
Market Transfers Top 10 Economies by Transaction Count

Last 10 years by end of December 2022

Top 10 Source



Top 10 Recipient



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Factors Affecting Transfers

- Market transfers into APNIC region have remained static
 - Due to the availability of IPv4 in the APNIC pool?
- Market transfers out of the region have increased considerably
 - For the same reason?
- We expect an increase in market transfers as “last /8” IPv4 resources acquired from late 2017 are now transferrable after 5 years (policy Prop-116)
- Inter-RIR transfers are still a largely manual process, but RIRs are working on automation
 - Recent improvements have reduced ROA downtime during transfers (make before break)



ARIN Transfer Policies and Statistics

John Sweeting
ARIN

ARIN Transfer Policies

Mergers and Acquisitions (NRPM 8.2)



Traditional transfer from merger, acquisition, or reorganization supported by legal documentation

Transfer to a Specific Recipient (NRPM 8.3)



IPv4 Market Transfer from one organization to another that it specifies, supported by justified need (**within** the region)

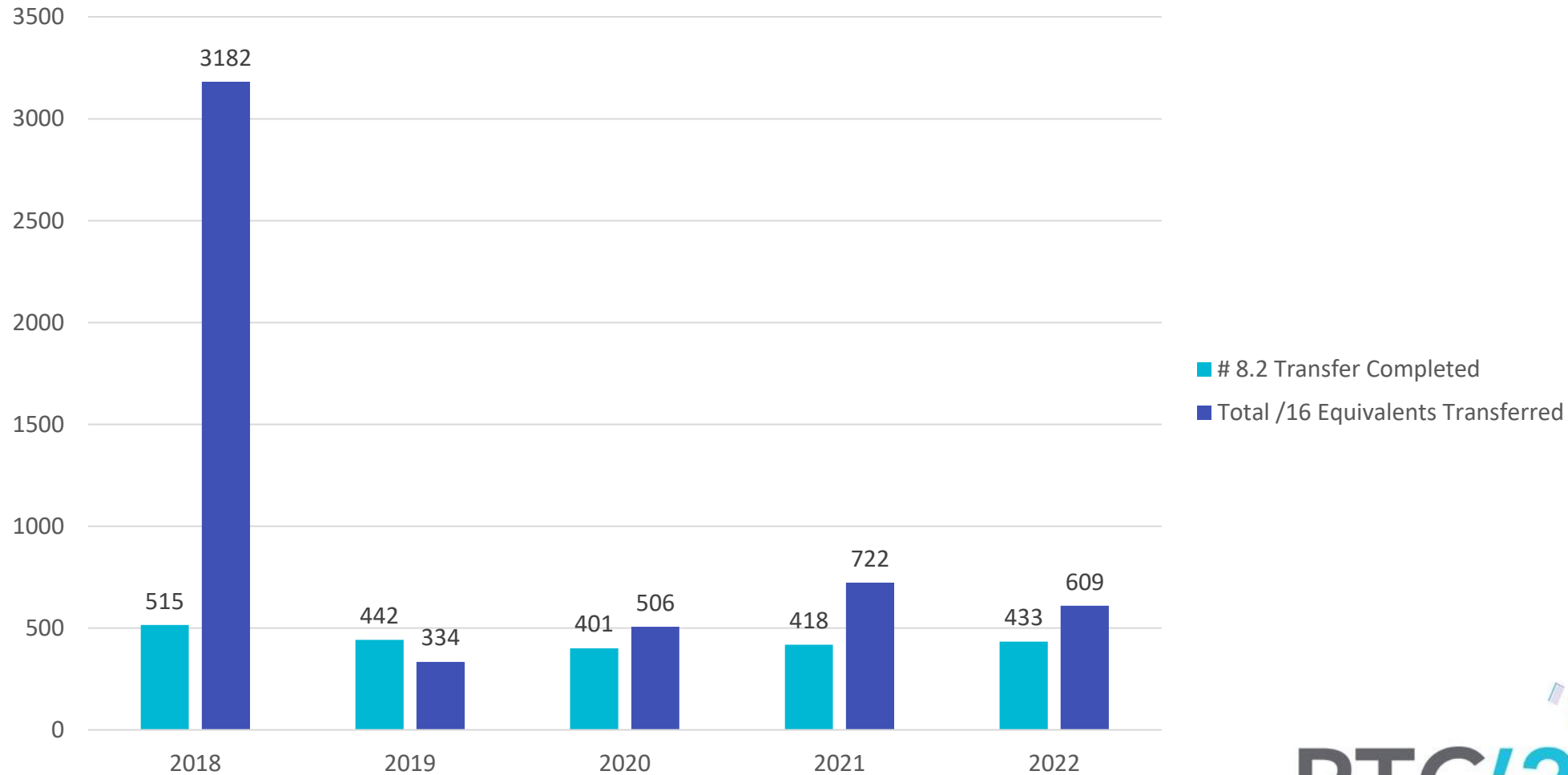
Inter-RIR to a Specified Recipient (NRPM 8.4)



IPv4 Market Transfer from one organization to another that it specifies, supported by justified need (**between** regions)



Mergers & Acquisition (NRPM 8.2) 2018-2022



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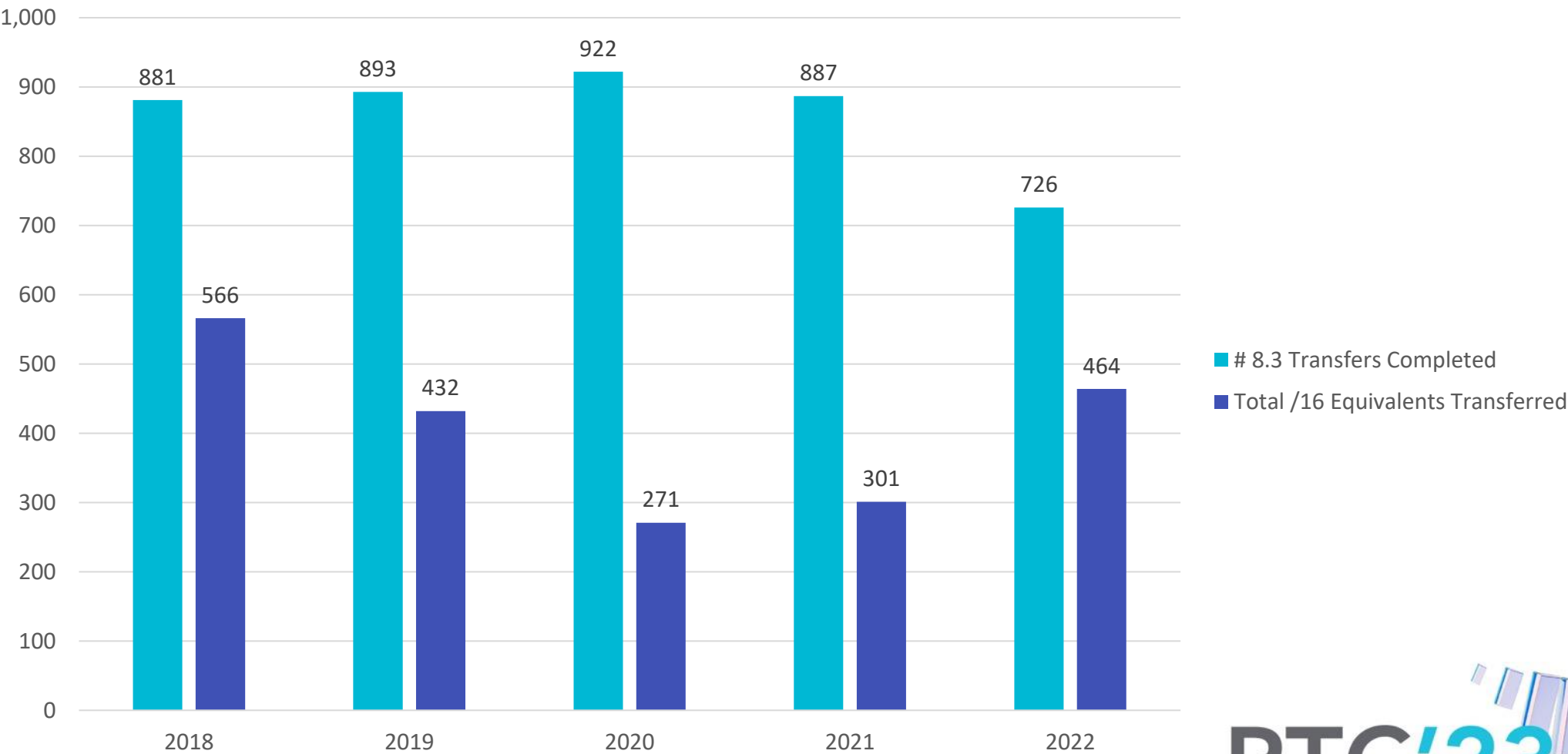
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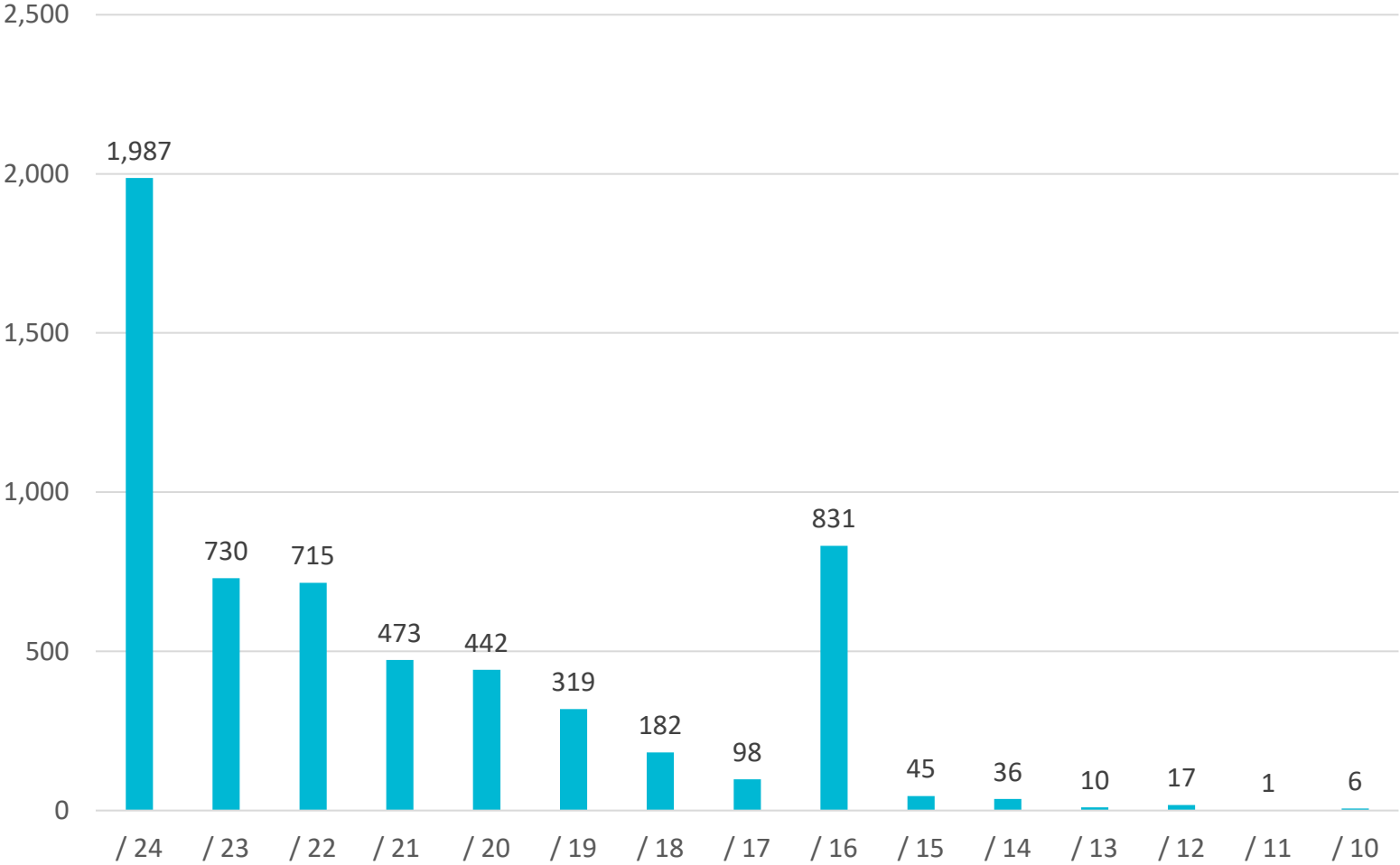


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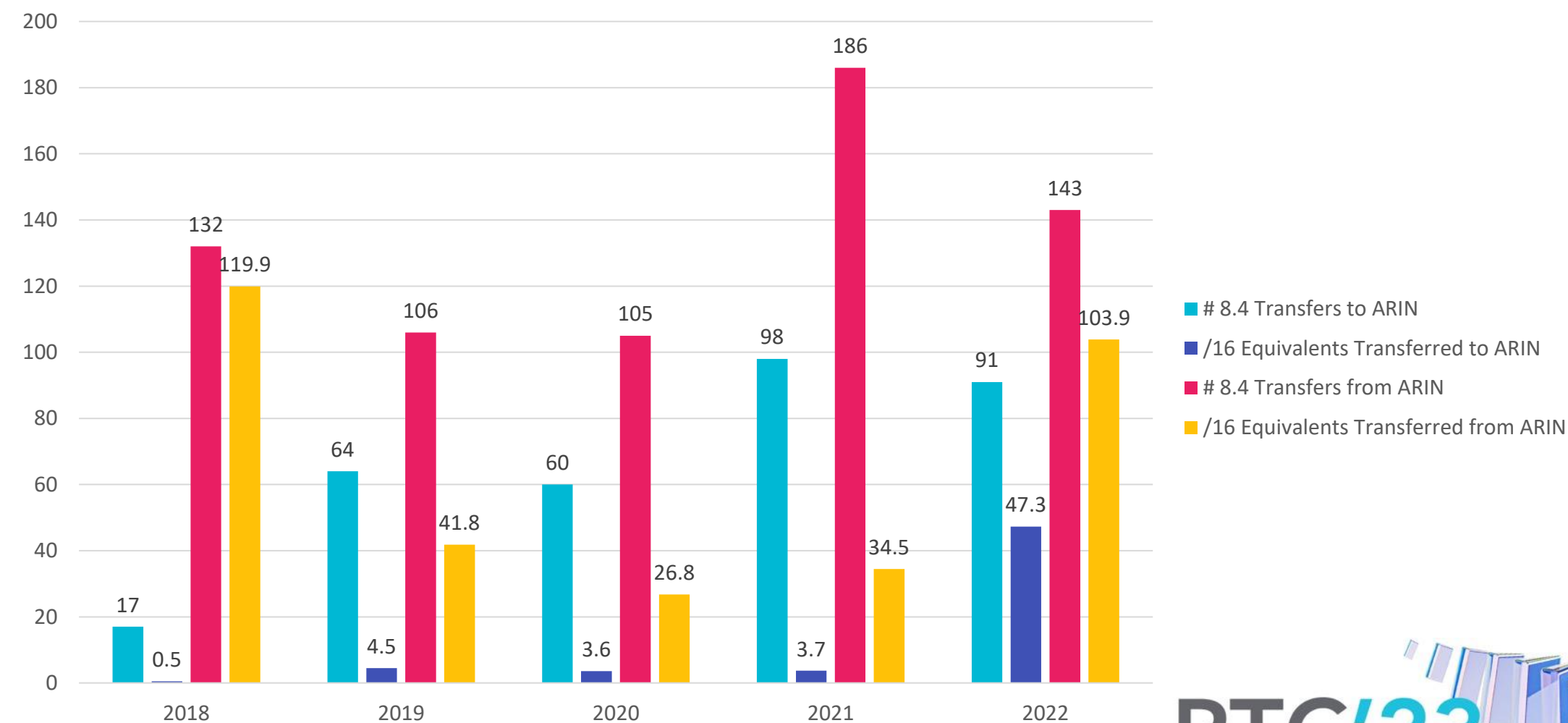
Need-Based In-Region (NRPM 8.3) Transfers 2018-2022



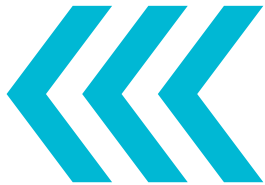
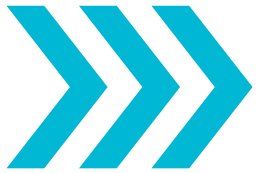
Need-Based In-Region Block Sizes (NRPM 8.3) 2018-2022



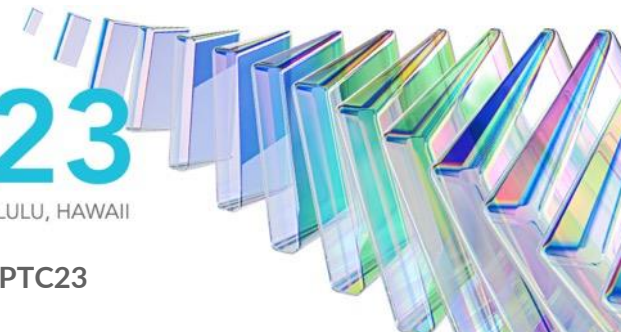
Inter-RIR (NRPM 8.4) Transfers - 2018-2022



ARIN Transfer Summary



- Marked increase in Inter-RIR volume
- Processing time is stabilizing
- Transfer activity increasing LRSA coverage
- Most specified transfer blocks are small



Transfer Market Size and Price Trends

Lee Howard

IPv4.Global by Hilco Streambank



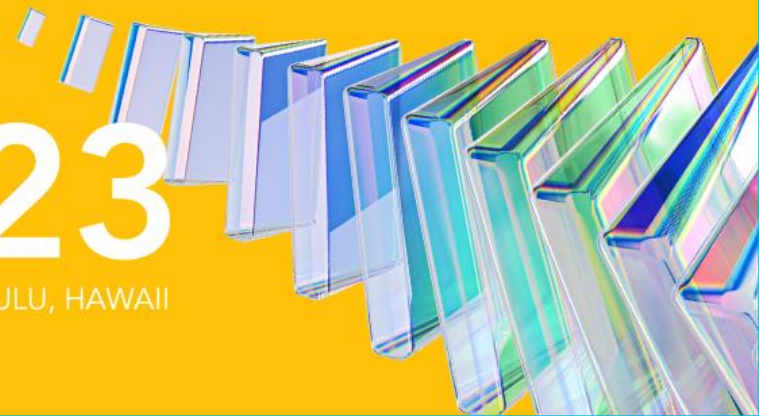
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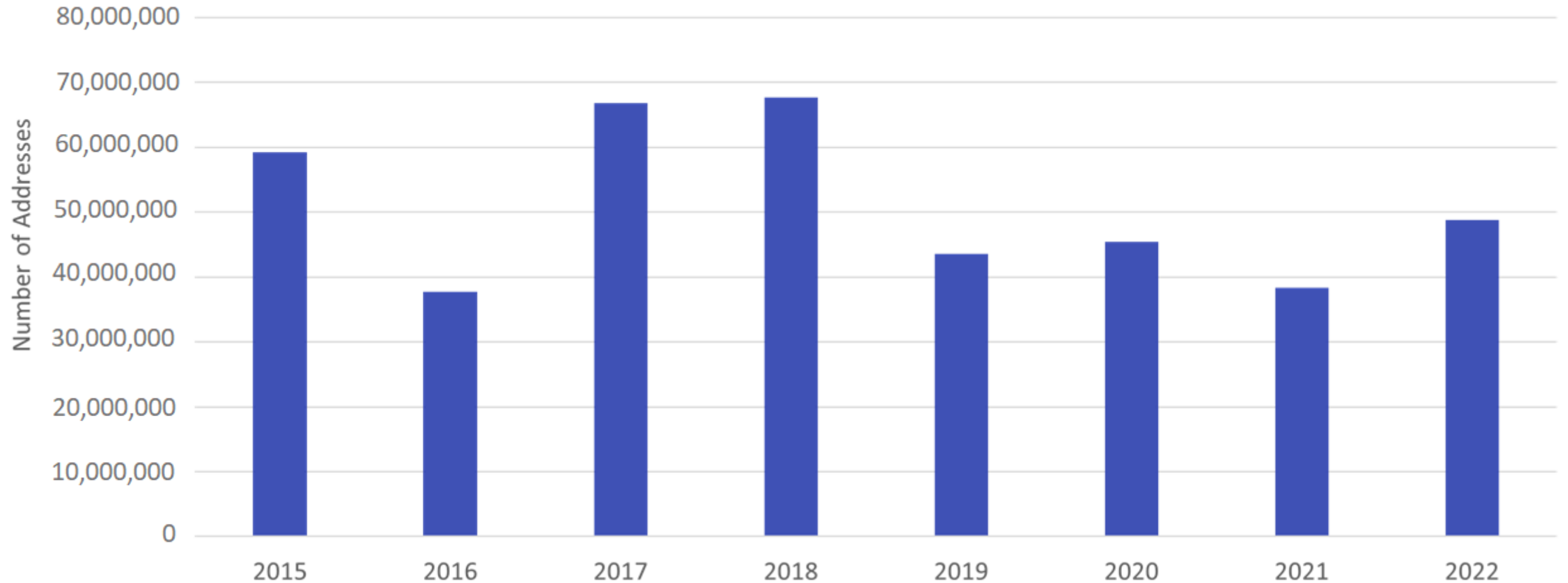
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IPv4 Market Size



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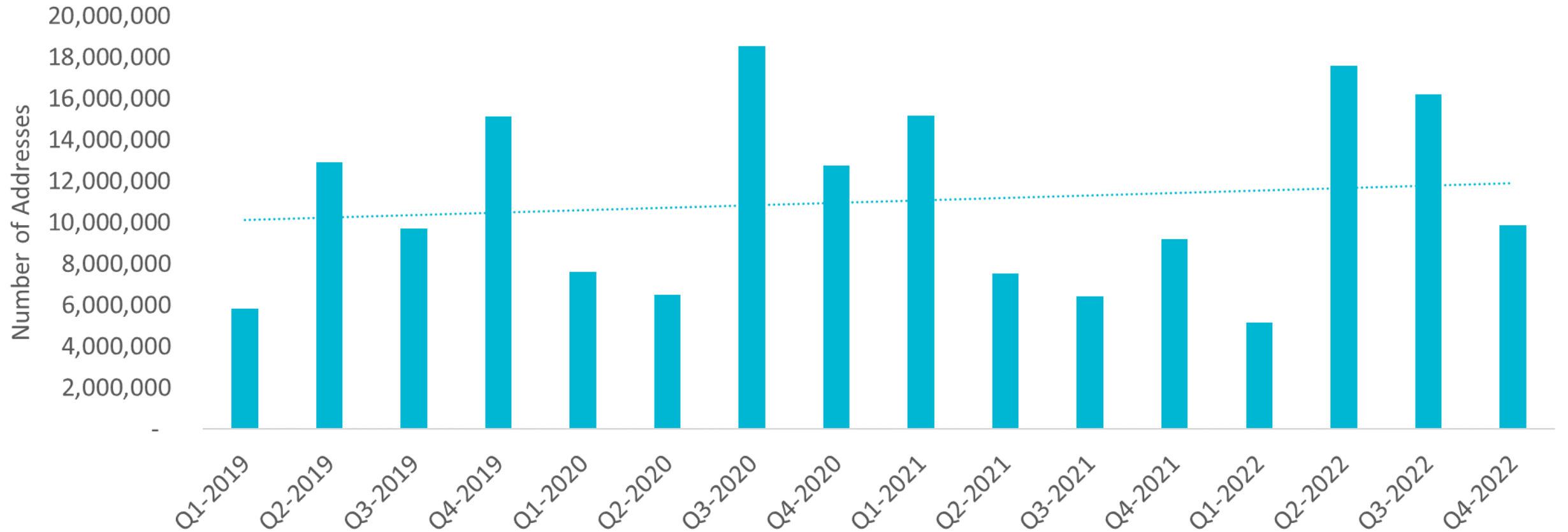
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IPv4 Market Size



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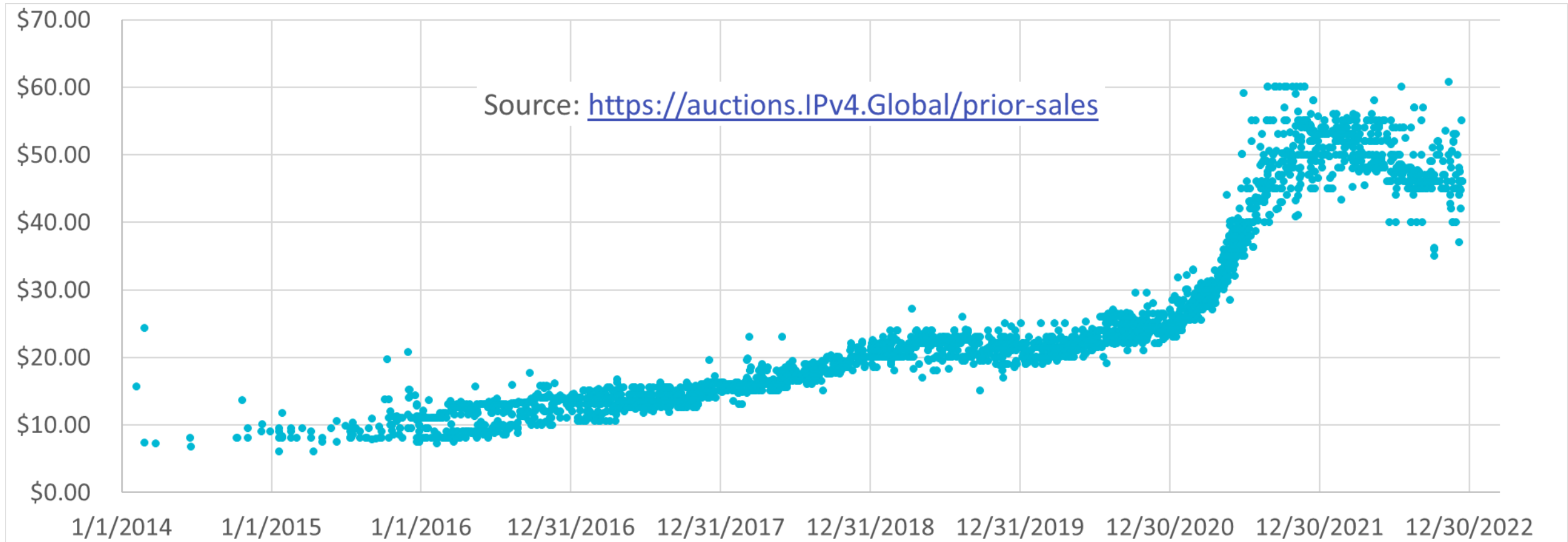
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IPv4 Market Prices (USD)



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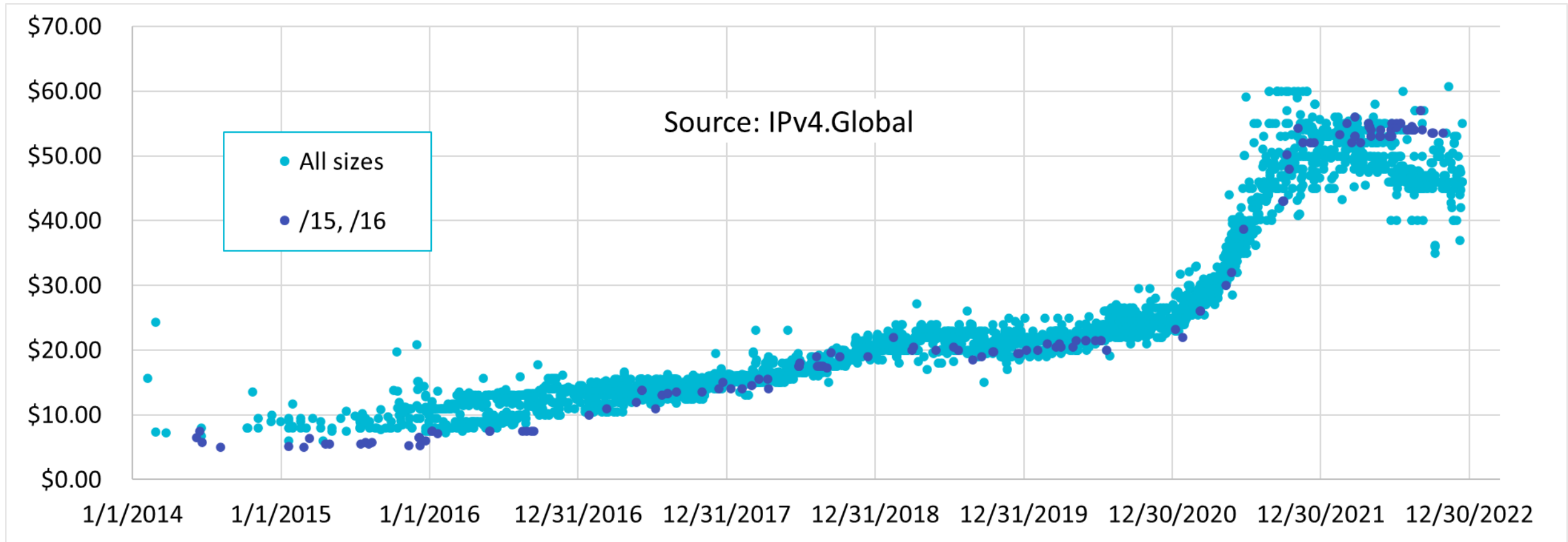
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IPv4 Market Prices (USD)



Things to Watch Out For with Transfers

William Sylvester
Addrex



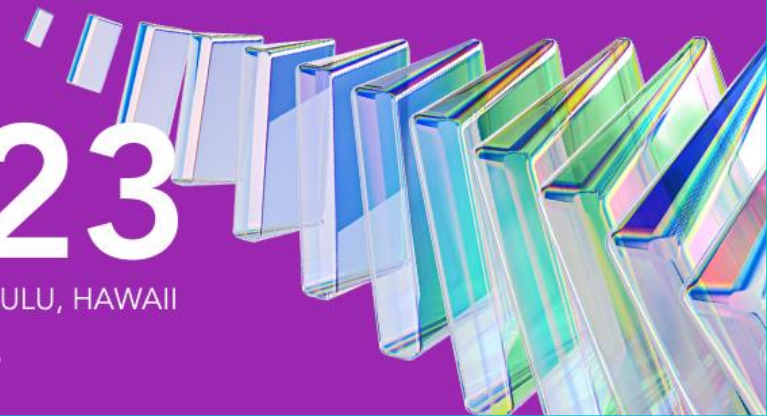
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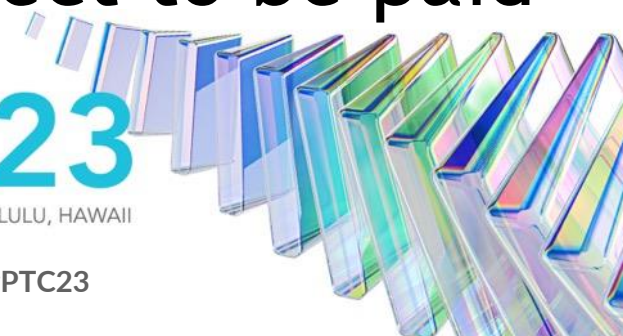


Adventures in Transfers

- Make sure your rights are contractually protected
- Verify that you're legally allowed to do business (FCPA, Sanctions, Do Not Trade)
- Verify that the seller actually has the rights to sell
- Require escrow to protect both parties
- Require Successful Registry Update prior to closing transaction

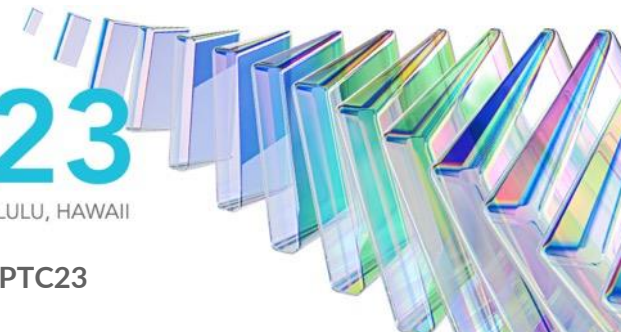
When is the Transfer Done?

- This typically means that the Whois for the appropriate registry is updated to reflect the buyer's information and control of the block
- Any necessary contracts with the registry have been signed
- The registry has accepted the custody documentation provided
- In the end if you properly configure RPKI on your network block through the registry your transfer is complete
- If you're a seller, this is the time when you expect to be paid



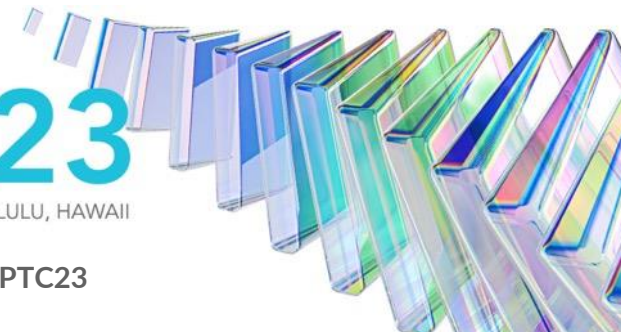
Sellers Beware!

- Using escrow means you have either your numbers or you got paid
- Get control of your numbers in the registry prior to a transaction
- Some sellers are exceptional... others not so much. Be wary of sellers requiring you to transfer the block first and get paid later
- Don't believe all the prices you read searching the Internet
- Verify your buyers is legal for you to conduct business
- As a Seller you may only do this once, get experienced help with professionals who can guide you through the process



Things to be Wary of for Buyers

- Start early when acquiring space, especially for /17 or larger
- Know the providence and custody of the block(s) you are purchasing
- Verify the registry shows the seller you are working with
- Escrow ensures you have money or your new block
- Make sure the registry is updated prior to closing transactions



Thank you.

Questions?