



IPv4 Transfers as seen by an IPv4 Broker

Recognised IPv4 Broker/Facilitator in:



Elvis Daniel Velea
Chief Business Analyst

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Agenda

- Transfer Statistics
 - APNIC
 - ARIN
 - RIPE NCC
 - Middle East
- Broker's observations
 - Number of Brokers in various regions
 - Services offered
 - Buyer's, Seller's and Broker's process
 - Observed prices
 - Observed prefix size (offered and requested)

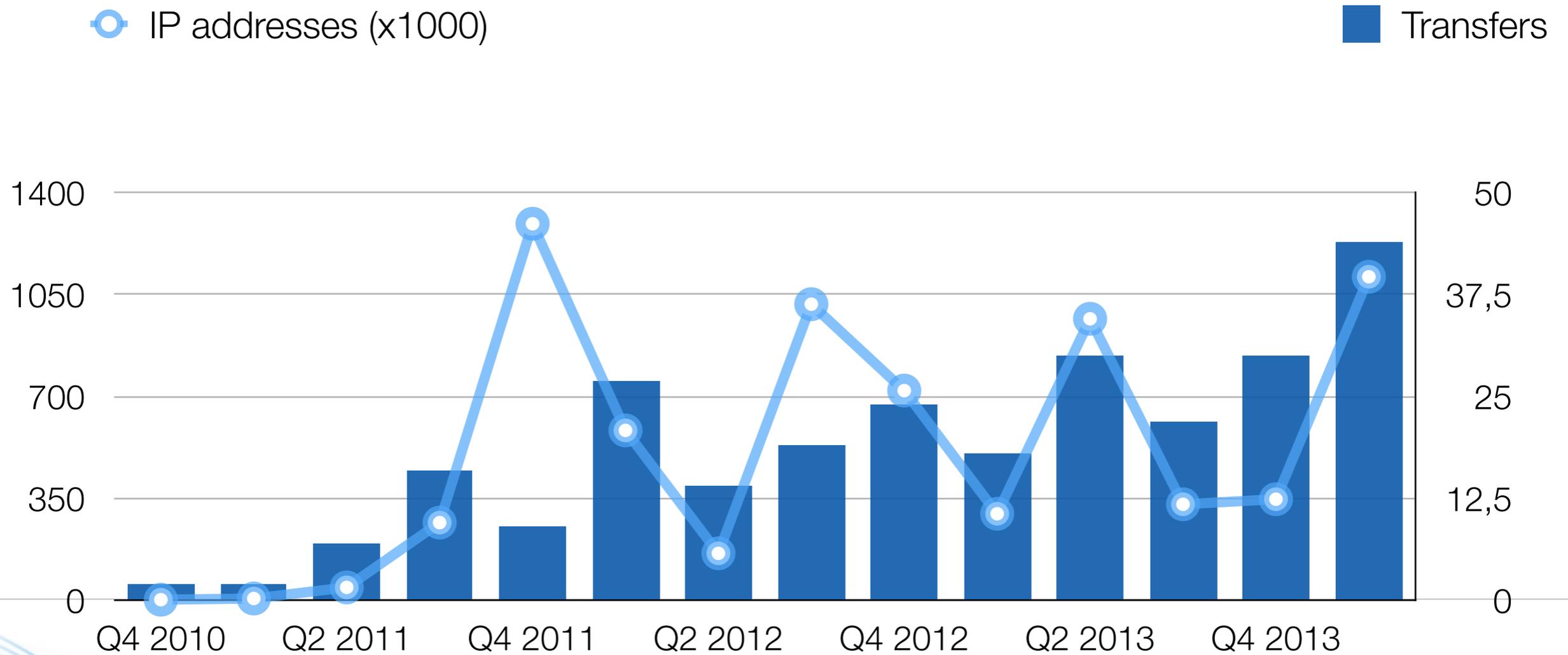
Transfer Statistics - APNIC

- Policies for transfers:
 - INTRA-RIR policy since February 2010 - First IPv4 transfer in Nov. 2010
 - compatible INTER-RIR transfer policy with ARIN since August 2011
- Run-out on 15 April 2011
- Total address space ~ 54.85 /8s (potaroo.net)
- 0 transfers from APNIC to ARIN
- Total transfers 6,488,306 *
 - 685,312 from ARIN *

Year	Number of Transfers	Number of IPs	Intra-RIR	Inter-RIR
2010	2	2,304	100%	0%
2011	34	1,611,264	100%	0%
2012	84	1,821,686	95%	5%
2013	100	1,941,756	85%	15%
2014 *	44	1,111,296	96%	4%

* stats of 2014 are for Q1

Transfer Statistics - APNIC



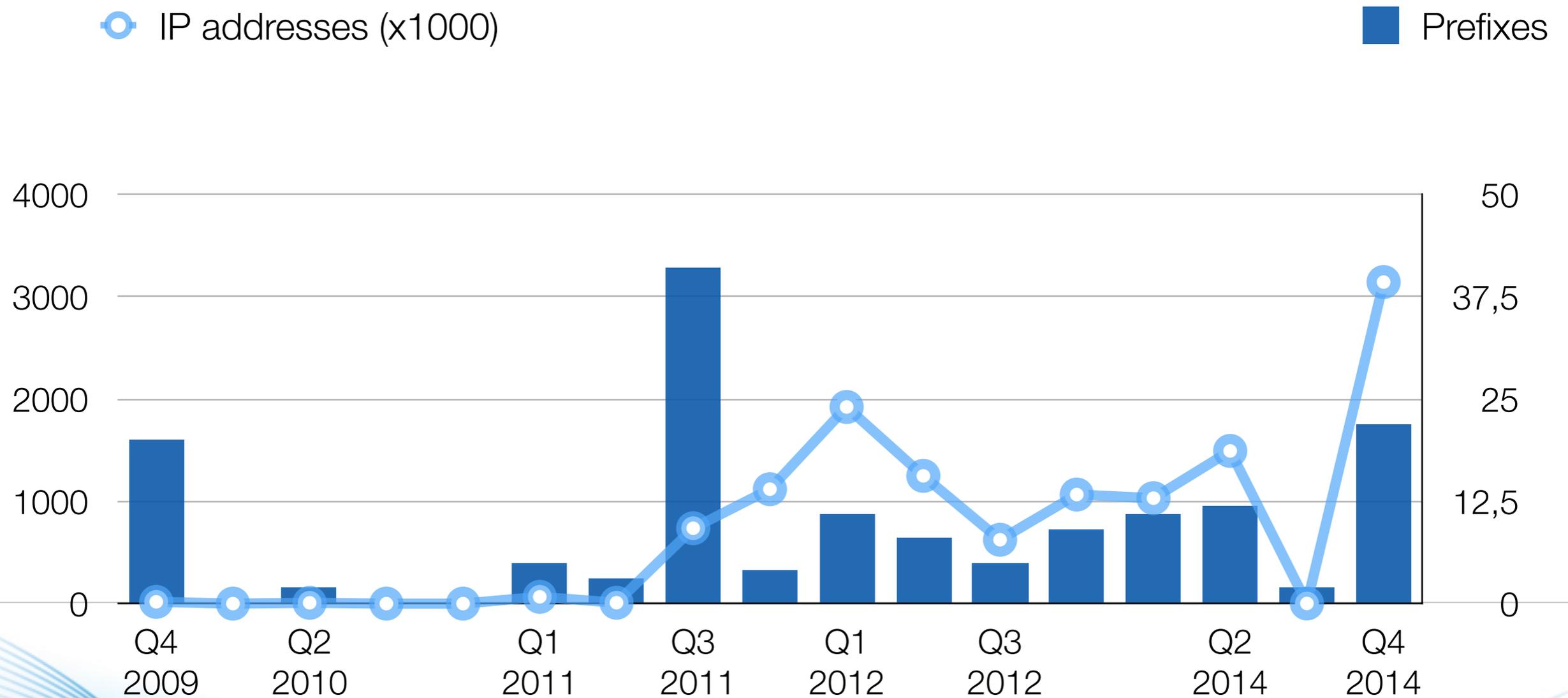
Transfer Statistics - ARIN

- Policies for transfers:
 - INTRA-RIR policy since June 2009 - First IPv4 Transfer in Oct. 2009
 - compatible INTER-RIR transfer policy with APNIC since July 2012
- Run-out expected in 2015
 - 1,37 /8 still available
- Total address space ~ 82.7 /8s (potaroo.net)
- Total transfers 13,979,136 *

Year	Number of Transfers	Number of IPs
2009	20	17,408
2010	2	8,192
2011	53	1,931,776
2012	33	6,328,064
2013	47	5,671,168
2014 *	6	22,528

* stats of 2014 include only January and February

Transfer Statistics - ARIN



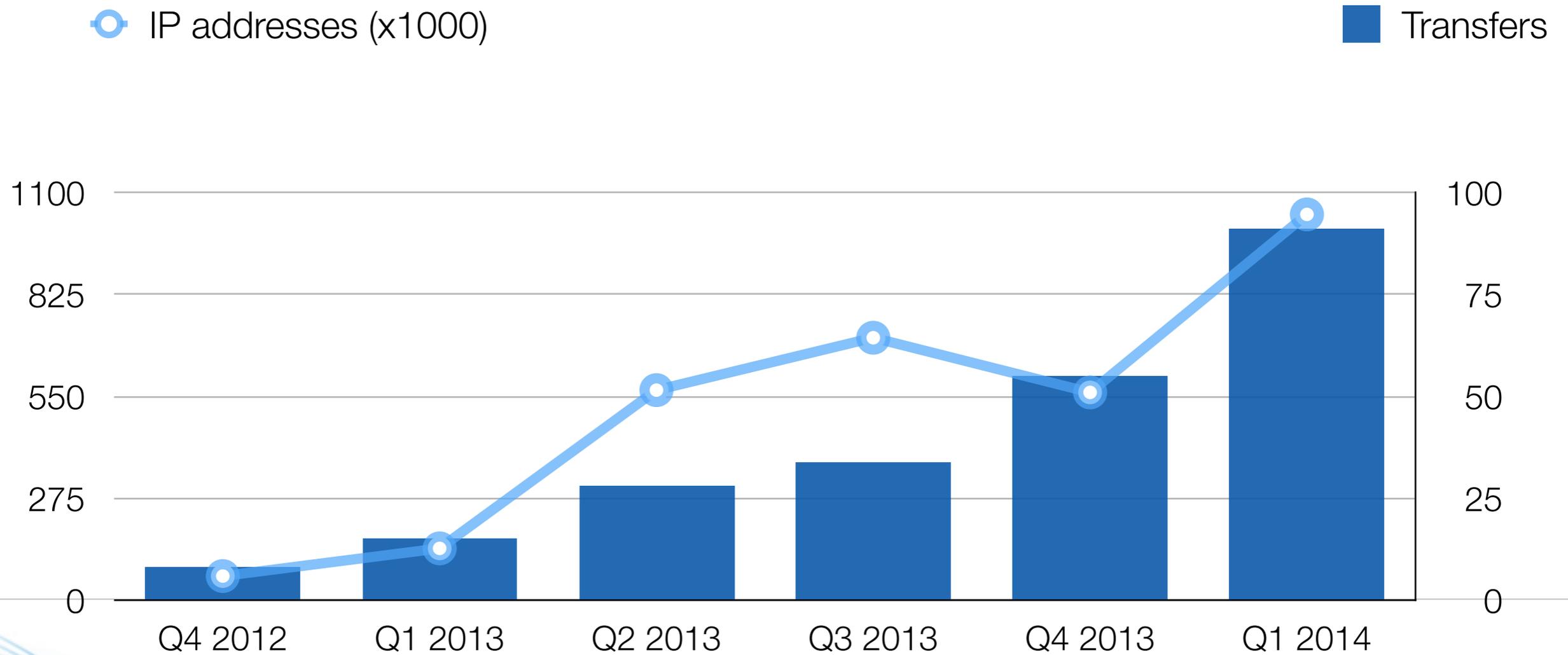
Transfer Statistics - RIPE NCC

- Policies for transfers:
 - INTRA-RIR policy since Dec 2008 - First IPv4 Transfer in Oct. 2010
 - no INTER-RIR transfer policy
 - 2012-02 pending new proposal since 17.04.2013
- Run-out on 14 September 2012
- Total allocated address space ~ 49 /8s (potaroo.net)
- Total transfers 3,084,288 *

Year	Number of Transfers	Number of IPs
2012	8	65,536
2013	132	1,977,344
2014 *	91	1,041,408

* stats of 2014 are for Q1

Transfer Statistics - RIPE NCC



Transfer Statistics - Middle East

- Transfers to Middle East companies *

Original Block	Transferred Blocks	From	To	Date
213.184.96.0/19	213.184.96.0/19	Sinet Telekom d.o.o Beograd	NET-STYLE ATARIM LTD	14/05/2013
176.65.0.0/19	176.65.16.0/20	Jinan modern Techniques and communication Ltd.	Mada ALArab LTD	17/07/2013
37.216.0.0/15	37.216.0.0/15	S.C. GVM SISTEM 2003 S.R.L.	Ettihad Etisalat	09/01/2014
46.244.0.0/17	46.244.64.0/20	A2B Internet B.V.	Mada ALArab LTD	22/01/2014
46.244.80.0/20	46.244.80.0/20	A2B Internet B.V.	Mada ALArab LTD	10/02/2014
95.183.0.0/19	95.183.0.0/21	Ltd Elekom	Xglobe Online LTD	03/03/2014

* from <http://www.ripe.net/lir-services/resource-management/ipv4-transfers/table-of-transfers>

Transfer Statistics - Middle East

- Transfers from Middle East companies *

Original Block	Transferred Blocks	From	To	Date
176.65.0.0/19	176.65.16.0/20	Jinan modern Techniques and communication Ltd.	Mada ALArab LTD	17/07/2013
77.92.160.0/19	77.92.160.0/19	Rawabi Telecommunications and Software Co. LTD.	Kalaam Telecom Bahrain B.S.C.	05/02/2014

* from <http://www.ripe.net/lir-services/resource-management/ipv4-transfers/table-of-transfers>

Last slide on statistics :-)

- We expected to see a higher number of Inter-RIR transfers from ARIN to APNIC
- Increased number of Intra-RIR transfers within APNIC
- Continuous increase of IPv4 transfers (doubling quarterly) in the RIPE Region
- 23,551,730 IP addresses transferred using the IPv4 transfer market
 - more than a /8
 - IPs transferred (in total): 3,5M in 2011, 8,2M in 2012, 9,5M in 2013
 - more than 2,1M in Q1 2014
- expecting to see more than a /8 being transferred in 2014

Number of brokers

- RIPE NCC has 17 Recognised IPv4 Transfer Brokers
- ARIN has 9 Registered STLS Facilitators
- APNIC has 8 Registered IPv4 Brokers

Services offered by Brokers

- The Broker usually offers escrow services
- The Broker signs a Brokerage Agreement and usually represents a Seller in the transfer
- The IP addresses transferred do not belong to the Broker
- The Broker sometimes offers additional services:
 - LIR setup, management and audit
 - Consultancy on best practices and best policy approaches
 - Database assistance, etc...

Buyer's process

- Calculate how many IP addresses you need
- Contact an IPv4 Broker
- Agree on the size of the allocation and the Price/IP
- Sign Trilateral NDA with the Broker
- Receive from the Broker information about the prefix and name of the Seller
- Examine the block
 - blacklist check whatismyipaddress.com/blacklist-check
 - routability history stats.ripe.net
 - do the due diligence
- Sign Asset Purchase Agreement
 - Agree on Escrow, Letter of Credit or direct payment
- Transfer is made through and by the RIPE NCC

Seller's process

- Contact an IPv4 Broker
- Sign an NDA agreement
 - list the IP allocations available for transfer and the expected Price/IP
- The Broker will match a Buyer willing to pay the requested price
- Delete all assignments, route and domain objects (no longer mandatory)
- Stop announcing the address space
- Sign a Brokerage Contract
- Sign Trilateral NDA with Broker and Buyer
- Agree on the payment method in the Asset Purchase Agreement
- Initiate transfer with the RIPE NCC

Broker's process

- receive contact from either the Buyer or the Seller
- sign an NDA with the Seller (they will not know who the Buyer is)
- sign an NDA with the Buyer (they will not know who the Seller is)
- sign a Brokerage contract with the Seller and agree on the commission
- negotiate in the name of the Seller with the Buyer and agree on the transaction price
- provide model of Asset Purchase Agreement
- usually act as Escrow in most of the transactions
- guide the parties in the RIR transfer process
- release the money once the Buyer has received the allocation
- receive the commission from the Seller

Observed prices

- In APNIC the requested price is around \$11/IP address
 - most of the transactions we have brokered have been at \$10,50/IP
 - there is some room for negotiation, but not below \$10/IP
- In the RIPE Region
 - we notice a lot of variation
 - it depends if the IP addresses are 'clean' or 'dirty' (previously used for spam or mass mailing)
 - it depends if the IPs are aggregated
 - we have seen most transactions at \$10-11/IP
 - if the block available is large, seller will accept a lower price - down to \$9/IP
 - largest blocks received by large corporations (Vodafone, Etisalat, etc)

Observed block sizes - Offered

- APNIC

- only small blocks offered (/24 - /20)
- a few were pretending to offer large number of IPs (/16s) but only in blocks of /22s
 - business model involved registering multiple companies, requesting /22 per company and then selling the companies for a profit of at least \$4,000 per /22
 - we decided to stay away from that business model
- most of the offered space is actually from ARIN

- RIPE NCC

- at least one /13, two /14s, several /15s, many /16s
- more than a /11 in total

Observed block sizes - Requested

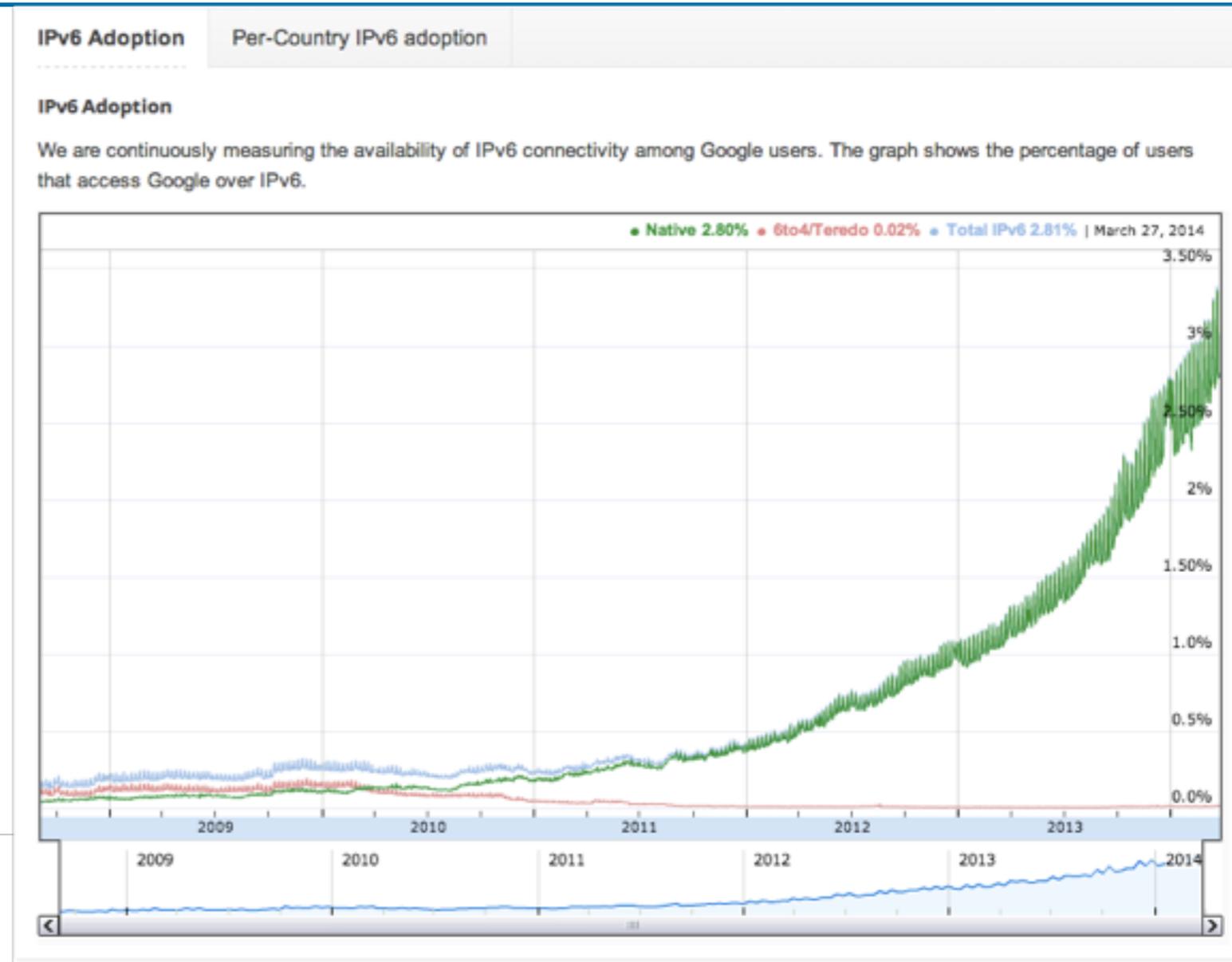
- In the APNIC region
 - most of the requests we have received have been for /24-/18
 - we have seen requests for /13-/17 but not many (around 10 requests in 6 months)
- In the RIPE NCC region
 - approx. 60 buyers have contacted us
 - approx. 35 for sizes between /22 and /18
 - approx. 10 for sizes below the minimum limit (/23 or /24)
 - approx. 15 for sizes above /17 (including a few requests for /14 and /13)

Leasing IPv4?

- Leasing is possible in various modes:
 - sub-allocation
 - assignment
 - temporary transfer
- Most requests we have received were from companies doing mass mailing wanting to lease address space
- If you want to lease your addresses to an other company, these may get blacklisted and become unusable
- We do not participate in the Leasing process, we have decided to only broker permanent transfers

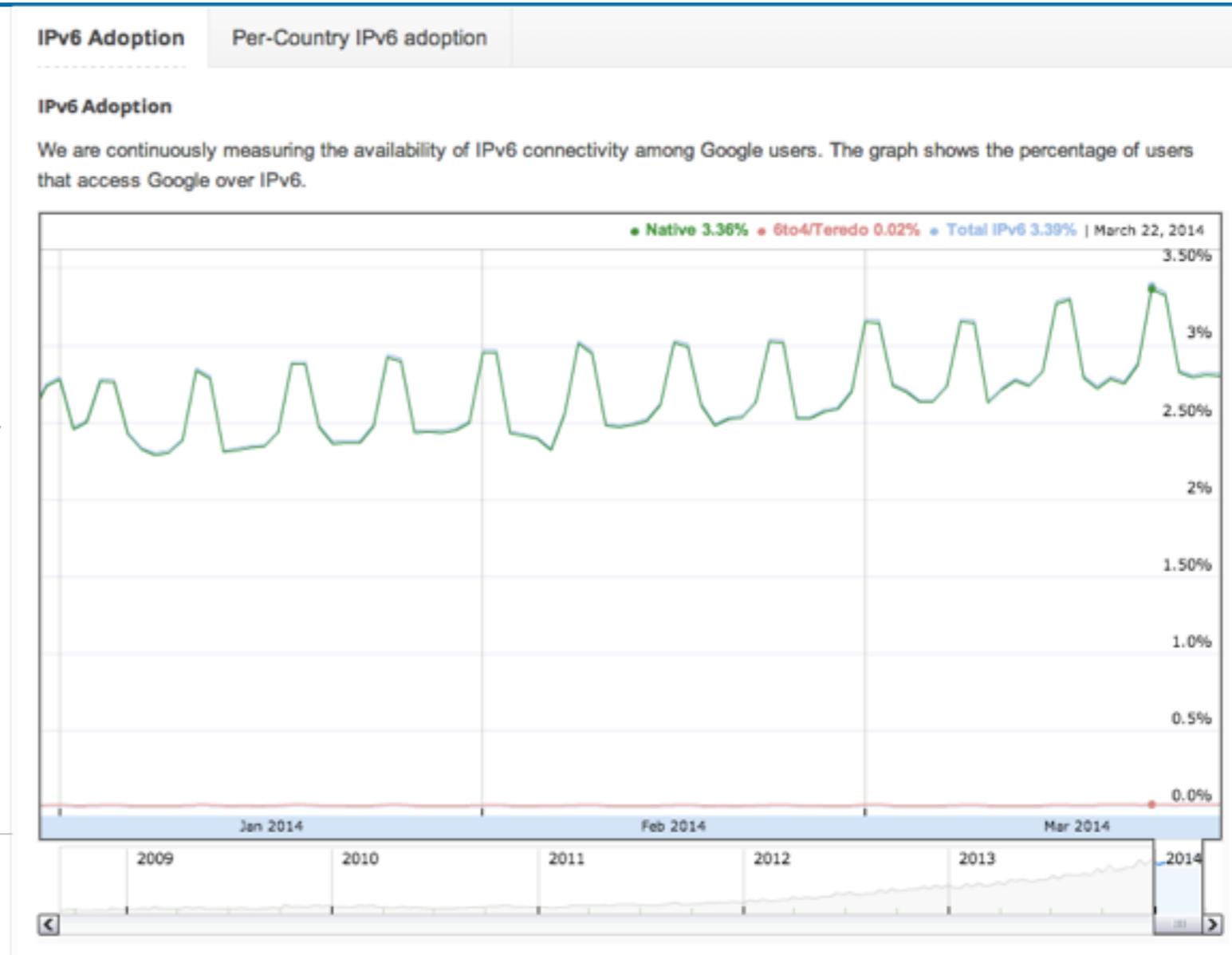
IPv6

- as per Google
 - since 2008
 - 100% growth in 2012
 - 150% growth in 2013



IPv6

- as per Google
 - 2014
 - more than .5% between weekend and weekday
 - already at 3.36%
 - still very low percentage of IPv6 users



Questions ?



v4Escrow

IPV4 RESTARTS HERE!

www.v4escrow.net

elvis@v4escrow.net