

IPv4 Run-Out

And the consequences

Depletion



Exhaustion



Run-out





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Timeline

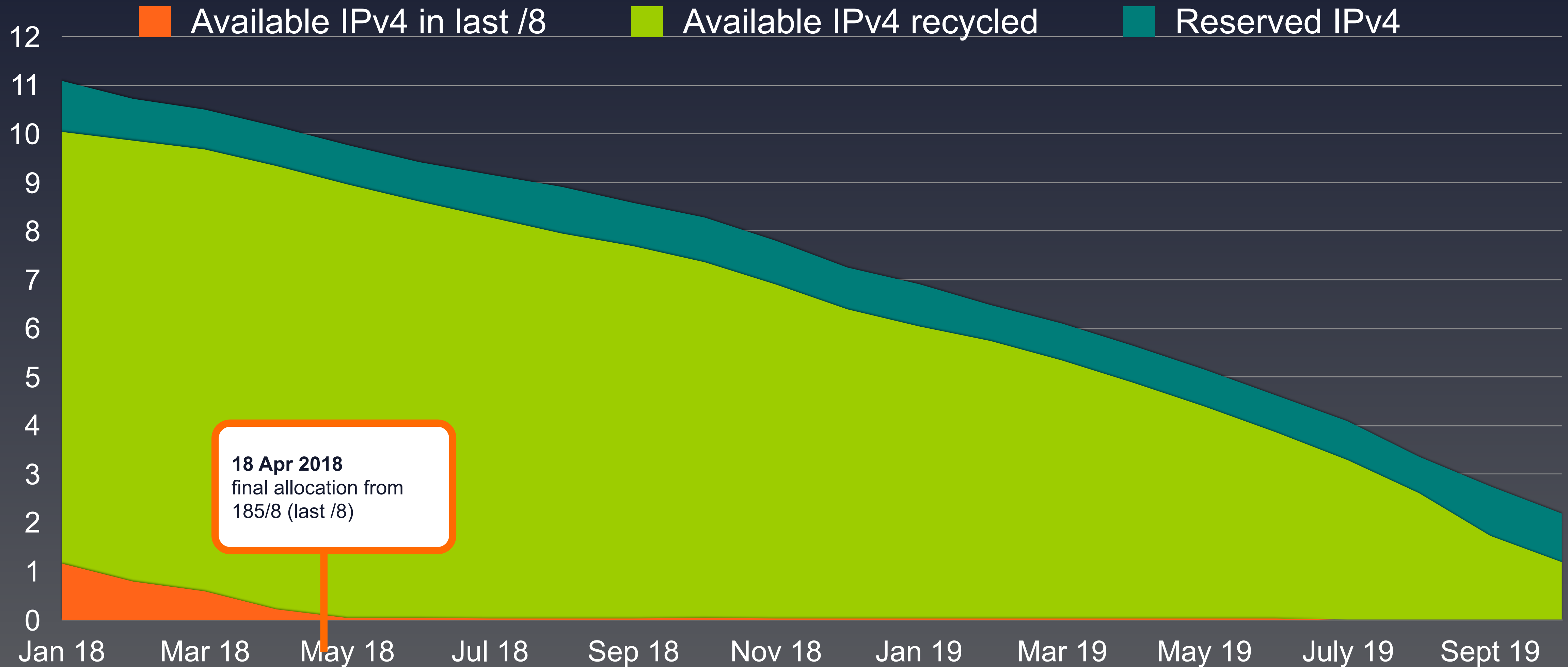


- 2011 IANA ran-out of /8s
- 15 Sept 2012 RIPE NCC: exhaustion - final /22 per member
- 17 April 2018 RIPE NCC: final 185/8 block depleted
- Soon: last /22 run-out

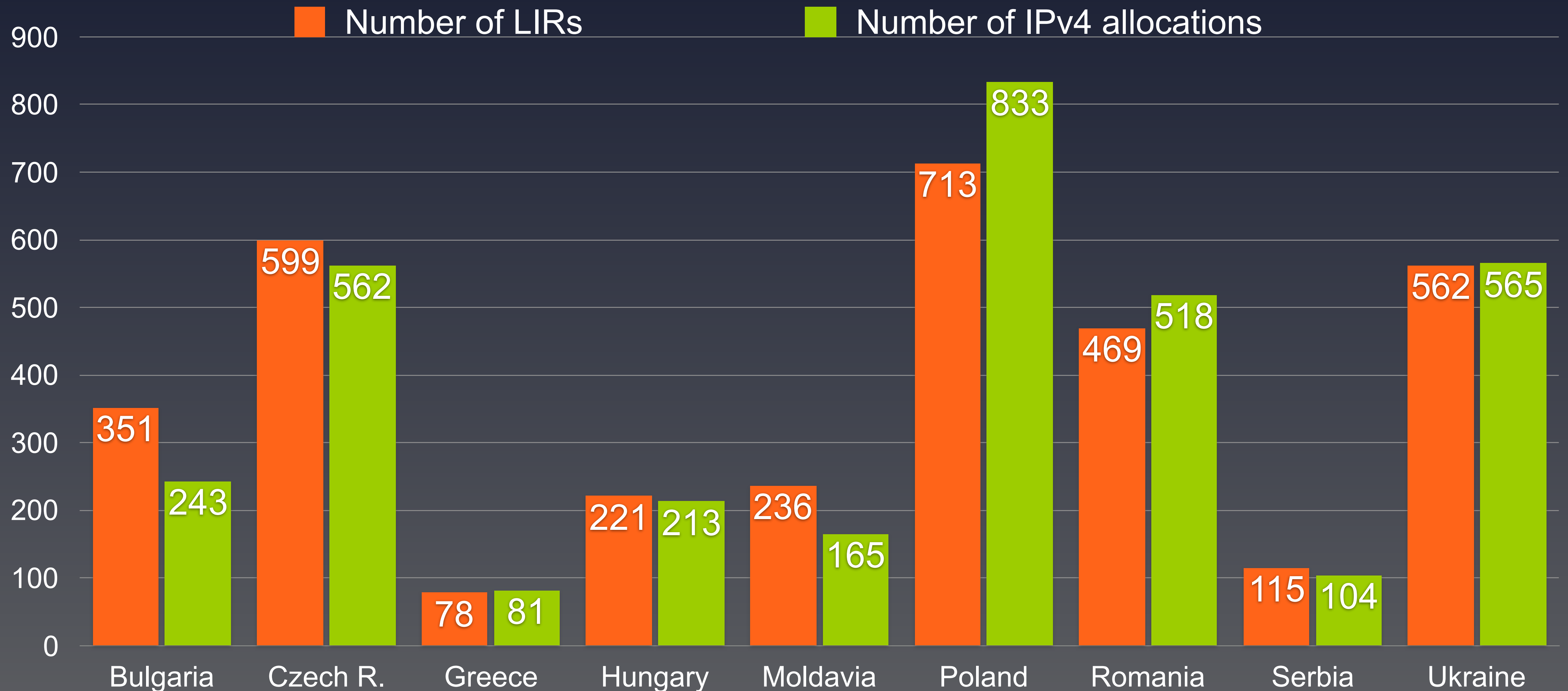


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Remaining IPv4 Pool in Millions



IPv4 Final /22 Allocation in Region





Now

The Last Bit of IPv4

Current Allocation Process



- Approx 1100 /22s left in the pool
- Contiguous /22s from the recycled pool
- Assembled /22 allocations from /23s and /24s
- No more /22 equivalent allocation: run-out

...and reserved IPv4



- /13 Temporary assignments
- IPv4 Dust
- /16 Internet Exchange Points (IXPs)
- /16 Unforeseen circumstances pool
- /13 Quarantine

...and addresses being returned



- Continues after run-out
- Closures
- Recovered space: equivalent of 1703 /24s, so far in 2019

The Waiting List

- Supported by the IPv4 policy
- Only if you did not get an IPv4 allocation from the RIPE NCC
- /24





Transfers

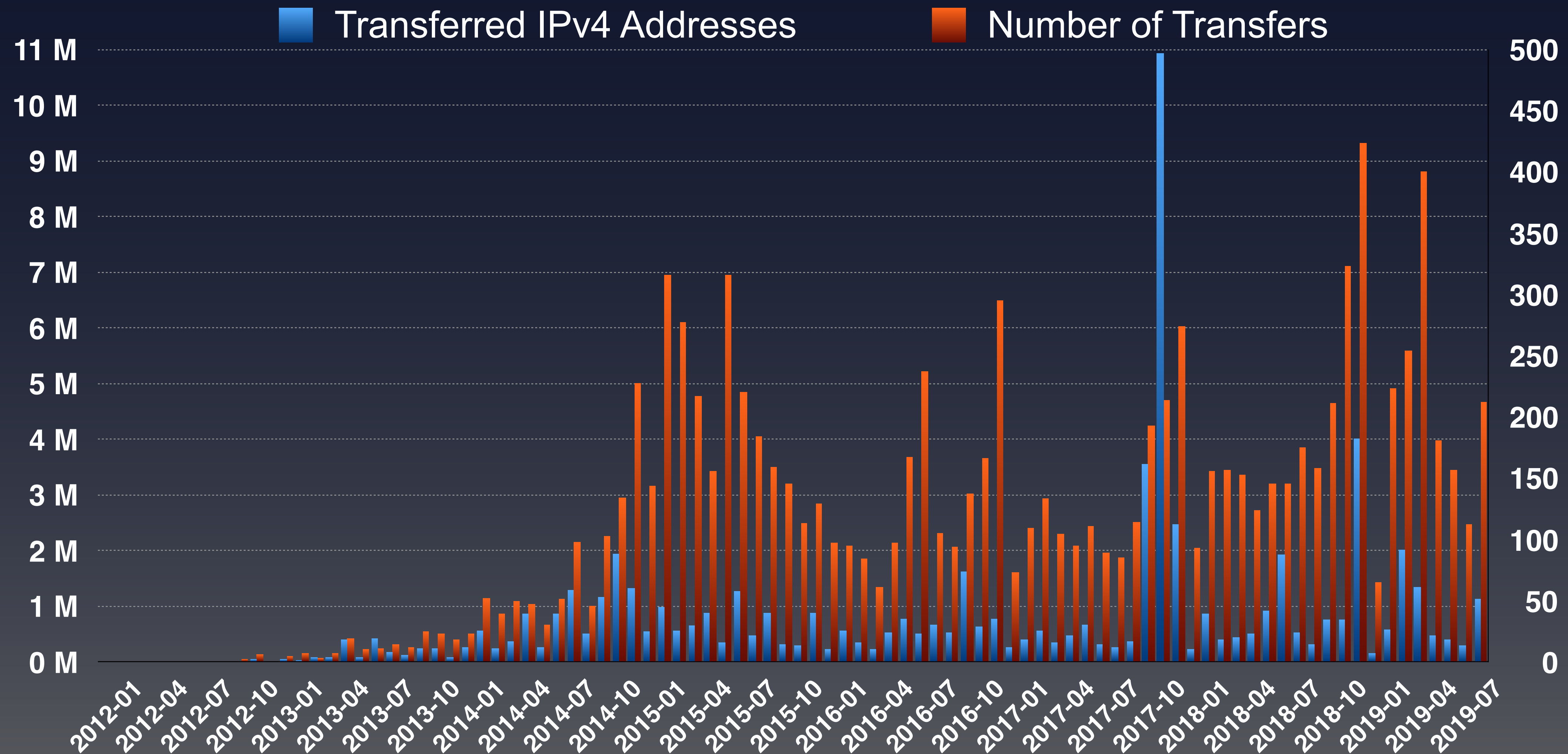
Soon the only way to get IPv4...

Transfers: RIPE community 2012 response

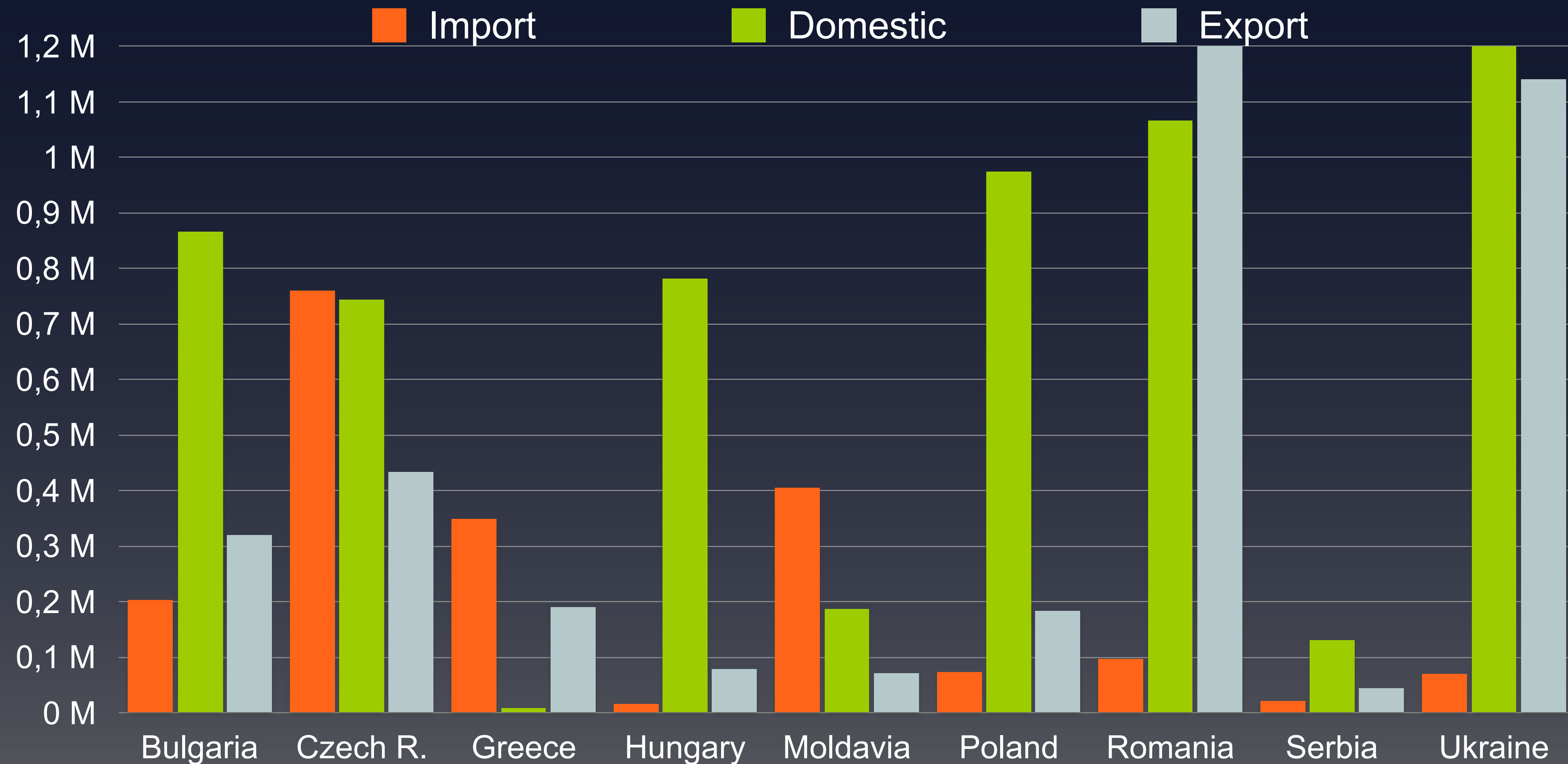


- Trading in IPv4 is inevitable
- Priority accurate registry
- Current policy:
 - IPv4 transfers are allowed
 - 24 month holding period

IPv4 Transfers in RIPE NCC Service Region (2012-2019)



IPv4 Addresses Transferred in this Region >2012





Where is this Going?



IPv4 Lifespan Extension

Rearranging deck chairs on the Titanic

IPv6 Now is the Time





Questions

