



RIPE NCC
RIPE NETWORK COORDINATION CENTRE

IPv6 Development

Is it a bottleneck for digital growth in the region?

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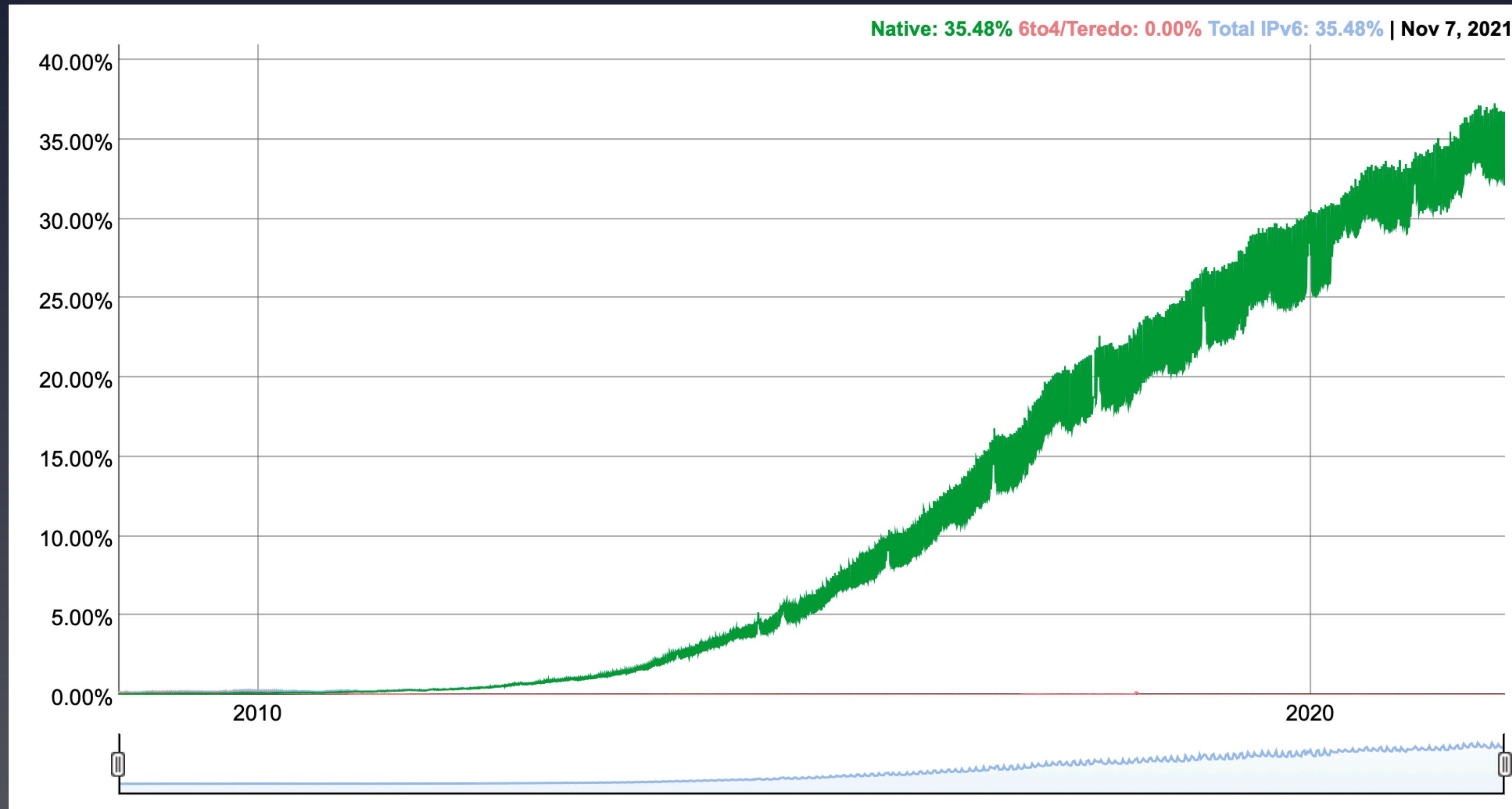
Regional Roundtable Meeting | 2 December 2021

What is IPv6?



- A «new» protocol, designed to address the issue of IPv4 scarcity
- Introduced in 1998 by IETF - very new, right!
- It is not directly interoperable with IPv4
- 2^{128} unique numbers
- Designed with IoT in mind, 5G is designed with IPv6 in mind

Where are we now with IPv6?



<https://www.google.com/intl/en/ipv6/statistics.html>

Global leaders with > 50% IPv6 adoption



- India - 65%
- Belgium - 56%
- Malaysia - 54%
- Germany - 53%
- France - 51%
- Vietnam - 50%
- Greece - 50%

US IPv6 program



- It only regulates the government sector
- The strategic intent is for the Federal government to deliver its information services, operate its networks, and access the services of others using only IPv6
- The technical, economic and security benefits of operating a single, modern, and scalable network infrastructure are the driving forces for the evolution towards IPv6-only in the private sector

<https://www.whitehouse.gov/wp-content/uploads/2020/11/M-21-07.pdf>

US IPv6 program



- All agencies must develop an IPv6 implementation plan by the end of FY 2021 and make it public
- At least 80% of IP-enabled assets on Federal networks are operating in IPv6-only environments by the end of FY 2025
- IPv6 deployment plans must be included in IT security plans, architectures and acquisitions
- Starting from 2009 all budget-purchased IT products and services had to be IPv6-capable

<https://www.whitehouse.gov/wp-content/uploads/2020/11/M-21-07.pdf>

China IPv6 program



- By 2023
 - 700 million active IPv6 users
 - 200 million Internet of Things devices use IPv6
 - home wireless routers are required to enable and fully support IPv6 by default, with a total of 30% already using it
 - 50% of Internet traffic uses IPv6
 - Starting the end of 2023, all new networks, applications, terminals, platforms and industries must deploy IPv6 single-stack

China IPv6 program



- By 2025
 - 800 million IPv6 users
 - 400 million IoT devices use the protocol,
 - 70 % of mobile traffic will run over IPv6
 - 50% of routers using IPv6
 - all government websites use IPv6
 - 95% of commercial websites and mobile internet applications will be required to fully support IPv6
- By 2030 - IPv6 single-stack deployment is complete country wide

Regional situation



- Russia - 10%
- Moldova - 8%
- Belarus - 6%
- Armenia - 5%
- Kazakhstan - 3%
- Azerbaijan, Georgia, Kyrgyzstan, Tajikistan, Turkmenistan
Ukraine, Uzbekistan - < 1%

Why?



- No visible reasons or regulatory roadblocks
 - No supporting regulation as well but at least no blocks
- IPv4 availability is an issue
- Lots of capable network engineers and a lot of those who completed RIPE NCC IPv6 Training Course
- IPv6 on Certified Professionals from RIPE NCC
- SORM is IPv6-ready
- Some notable proponents of IPv6 like Yandex and Google



Instead of conclusion

- We probably won't see a 100% of global IPv6 traffic in the future we can foresee...
- ... nor do we aim for that
- Deploying IPv6 is a business development decision...
- ...that not every operator and not every web-site is pushed to make or will make
- It makes a lot of sense for those interested in new technologies and in growing their user-base



Questions



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