IPv6 in Crnogorski Telekom

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Core Platforms and Services

Budva 2023-09-29

```
inet6num.....: 2a00:fe80::/29
netname......: ME-CRNA-20110603
country......: ME
org..........: ORG-ICGd1-RIPE
admin-c......: TMa29-RIPE
tech-c.......: VR3145-RIPE
status.......: ALLOCATED-BY-RIR
notify.......: ripeadmin@telekom.me
mnt-by.......: RIPE-NCC-HM-MNT
mnt-by.......: AS8585-MNT
mnt-lower....: AS8585-MNT
mnt-routes...: AS8585-MNT
created......: 2016-01-29T08:17:38Z
last-modified: 2016-08-15T10:43:35Z
source.......: RIPE
```

CRNOGORSKI TELEKOM IPV6 ON RIPE NCC

Origin	Prefix
AS 8585	2a00:fe80::/29

IPv6 Deployment – Motivation and Rationale

01 No new IPv4 ranges available

02 IPv4 space exhaustion confirms the predictions

03 Heavy CGNAT brings a number of "challenges"

04 New services are taking off (SmartX, m2m/IoT)

05 Simplified future-proof approach is IPv6-only

Native: 43.28% 6to4/Teredo: 0.00% Total IPv6: 43.28% | Sep 24, 2023

Google IPv6
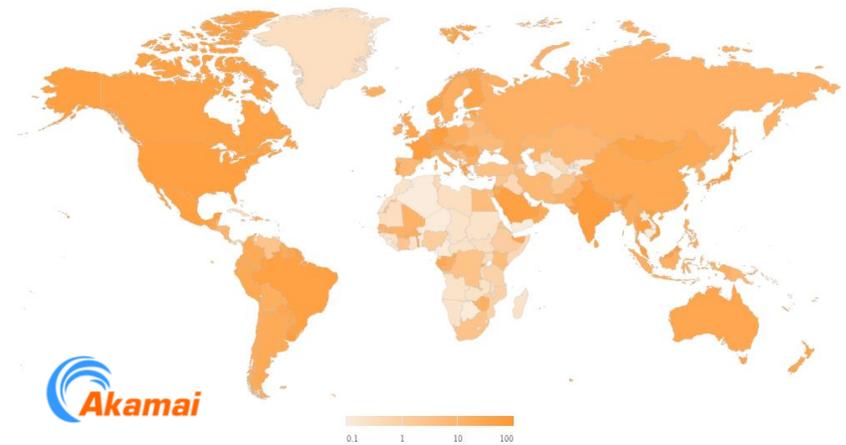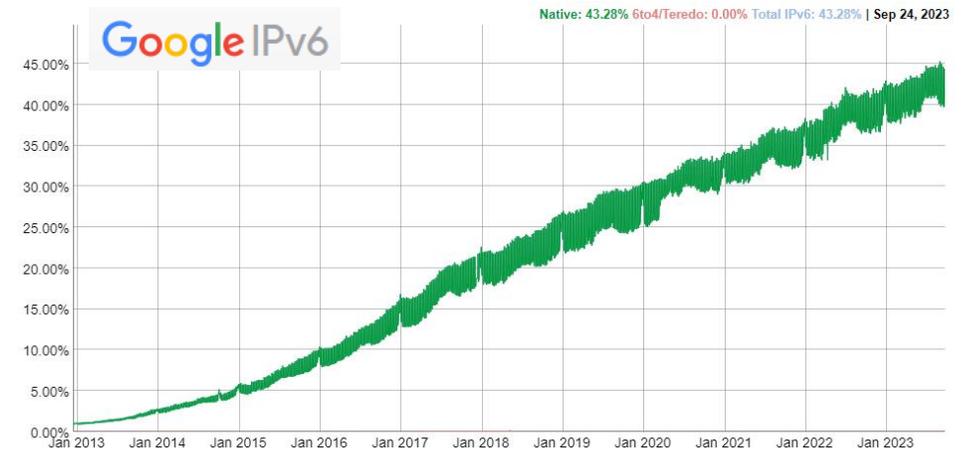
IPv6 in Crnogorski Telekom – State of Operation

Internet Core and Gateway

- IPv6 dual-stack active in ICG Core and GW
- Active IPv6 peering with Gia and sub-providers
- ISIS configured as inter-IGW IPv6 protocol
- Range `2a00:fe80::/32` announced publicly

Mobile Packet Core

- IPv6 fast convergence
- IPv6 routing
- IPv6 security
- IPv6 management

MPLS and Transport

- IPv6 support configured on RR and PE machines
- Infrastructure ready for IPv6 services in B2B/WS

Fix BroadBand Core

- IPv6 routing
- BRAS (PPPoE sessions)
- SP WiFi termination (IP sessions)
- Dual stack support for PPPoE and IP sessions

CT IPv6 Dual Stack Pilot in Mobile Broad Band

MBB e2e segment IPv6 ready

Core Network features made IPv4v6-DS possible
- Subscriber Database Management
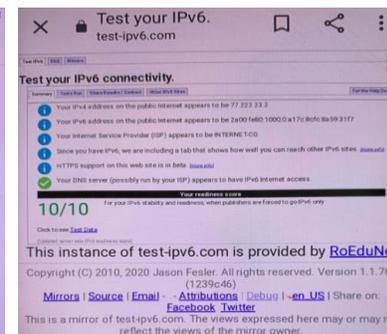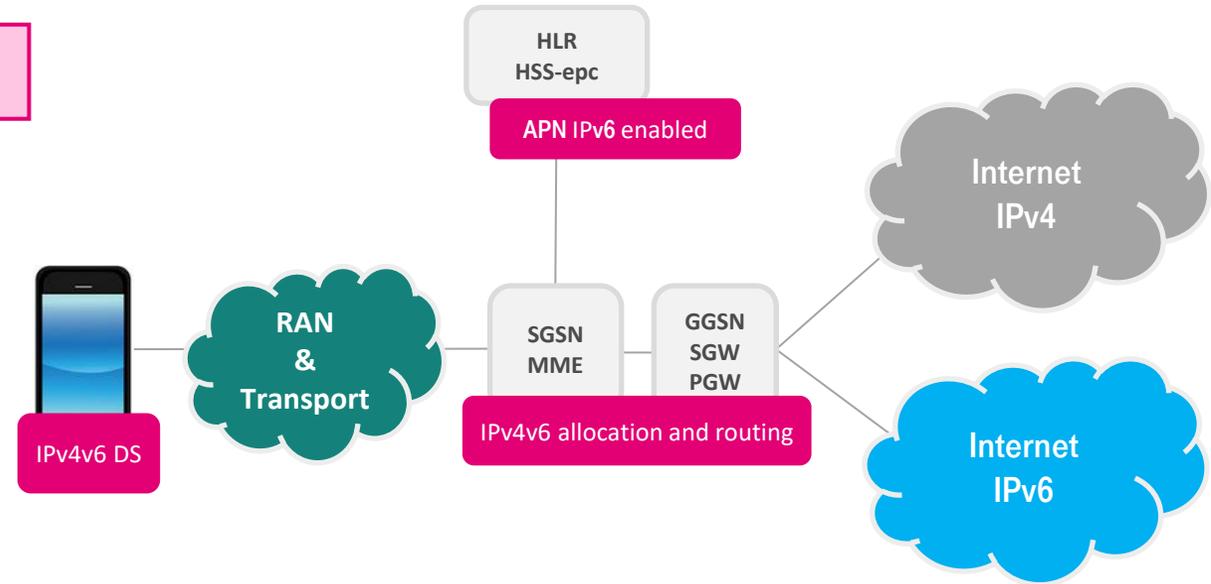- Mobility Management
- Gateway functions

IP routers affected
- Back-Bone network
- Internet Core segment
- Internet Gateway

IPv6 CT range advertisement sessions

Test scenarios in two groups
- e2e service
- Internet visibility
  - test-ipv6.com
  - ipv6-test.com
  - ipv6test.google.com
  - https://lg.he.net/

Moving further - Challenges

- Large existing network and interconnectivity
- Variety of vendors and NEs
- Different IPv6 plans and RMs
- Difference in operational tools
- IPv4 world still dominant

Phase 1

Transition model selection for Fix and Mobile BB

Phase 2

IPv6 and DS features in service and support segment

Phase 3

IPv6 and DS functions on end-user equipment

Phase 4

Environment

- **Provisioning**
- **Charging**
- **OM**
- **Monitoring**

THANK YOU