IPV6 IN CRNOGORSKI TELEKOM

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Podgorica 2021-04-20

LIFE IS FOR SHARING.

RIPE NCC Member

```
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::/32

HIGH LEVEL MOTIVATION FOR IPV6 DEPLOYMENT

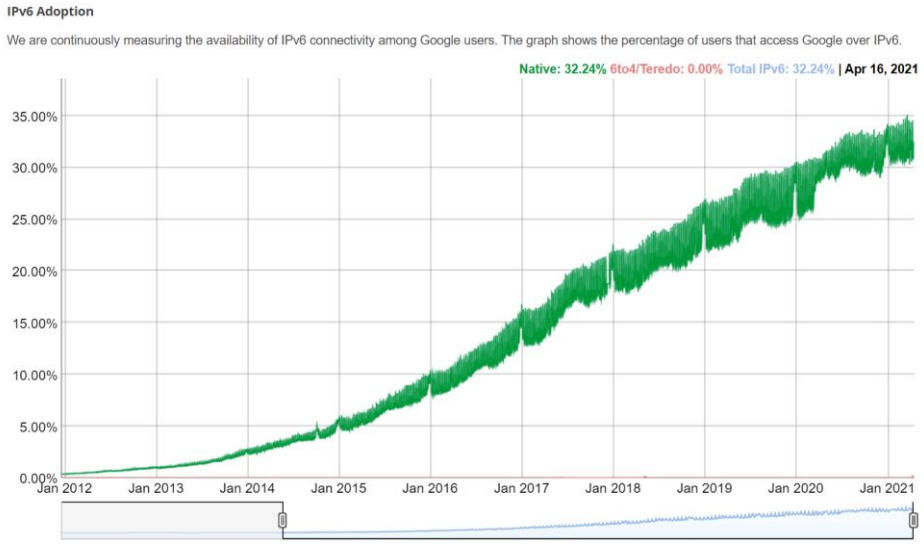
01 Public IPv4 addresses are already allocated
No new IPv4 ranges available from RIPE NCC

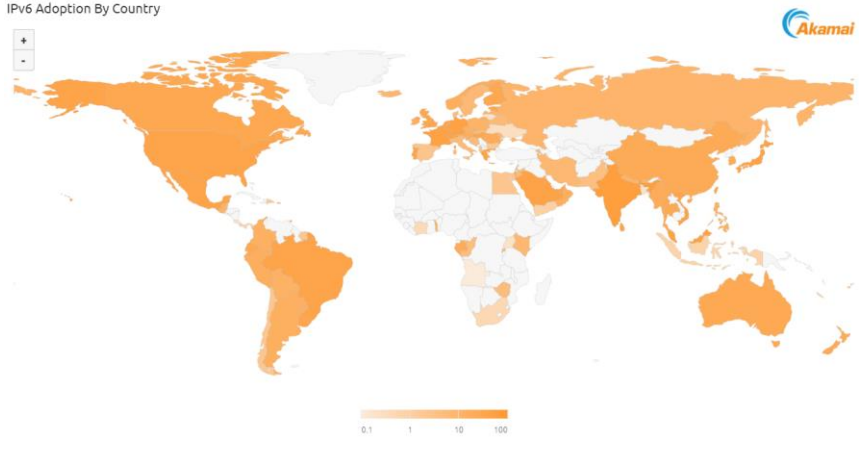
02 Number of TelCos have already exhausted IPv4
confirming the inevitability of the process

03 CGNAT in use to mitigate IPv4 exhaustion
with a number of disadvantages

04 New services are taking off (SmartX, m2m/IoT)
New IP addresses demand is growing

05 Simplified future-proof approach is IPv6-only
Complexity in IPv4-in-IPv6 enc/de-capsulation





IPV6 STATUS IN CRNOGORSKI TELEKOM

Internet Core and Gateway

IPv6 dual-stack active in ICG Core and GW

Active IPv6 peering with Gia and sub-providers

ISIS configured as internal IPv6 protocol between IGW

Range 2a00:fe80::/32 range visible from our IGW

Mobile Packet Core

Wide IPv6 support in **SGSN-MME** and **GGSN-SGW-PGW**

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

MPLS layer

IPv6 support configured on RR and PE machines

Infrastructure ready for IPv6 services in B2B and WS

FixBB Core

Wide range of IPv6 functions in **BRAS** segment

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

CT IPV6 DUAL STACK PILOT IN MBB

MBB e2e segment IPv6 ready

Core Network features made IPv4v6-DS possible

- HLR/HSS
- SGSN-MME
- GGSN-SWG-PGW

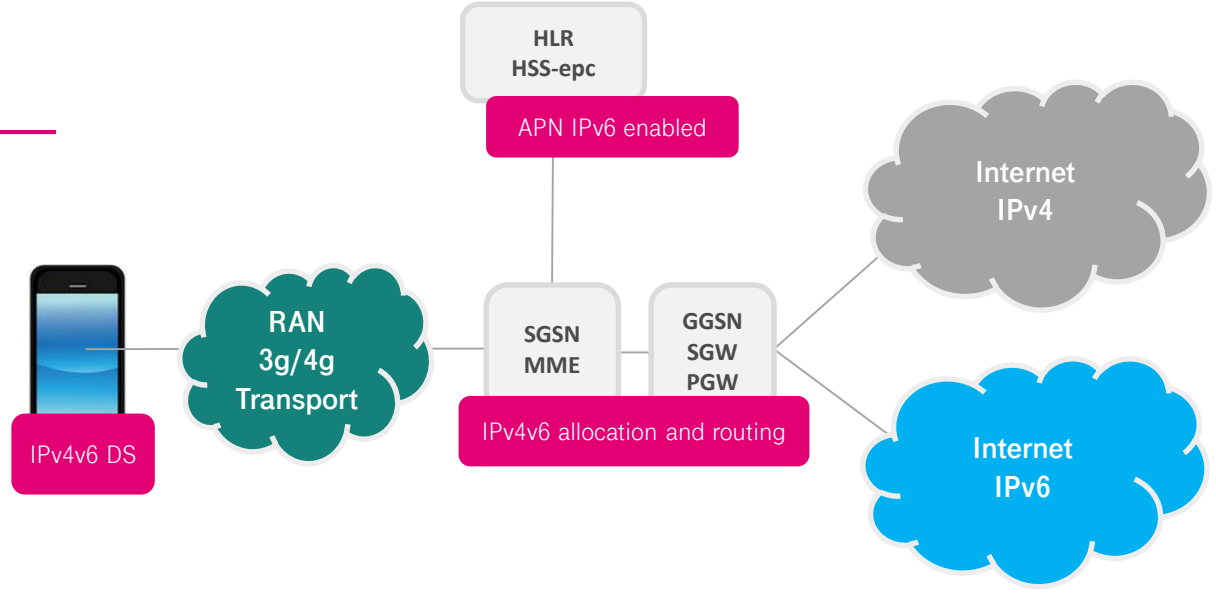
IP routers affected

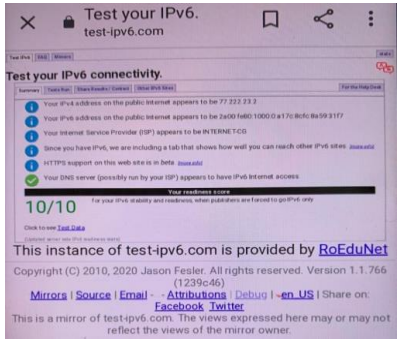
- Back-Bone
- IC
- IGW

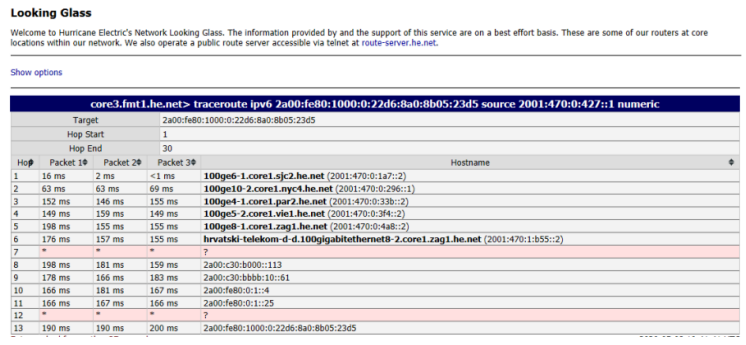
IPv6 CT range advertisement sessions

2-way test scenarios of e2e service and Internet visibility

- test-ipv6.com
- ipv6-test.com
- ipv6test.google.com
- https://lg.he.net/







HOW TO MOVE ON

Challenges

Large existing network

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 segment

(DNS, AAA, DHSP)

Phase 3

IPv6 and DS functions on CPE

- FixBB HGW
- Mobile phones

Phase 4

Support environment

- Provisioning
- Charging
- OM
- Monitoring


THANK YOU