IPV6 IN TELSTRA

APNIC37 – APIPV6TF PRESENTATION

WEDNESDAY 26/02/2014

Sunny Yeung
Senior Technology Specialist
Telstra Wireless Data Engineering

IT'S HOW
WE CONNECT

AGENDA

1. Why Deploy IPv6?
2. Strategy
3. Considerations for the Future

WHY DEPLOY IPV6?

WHY DEPLOY IPV6?

- Exponential Growth in mobile data traffic.
- Growth in the number of mobile user equipment.
- New devices are session hungry, consuming multiple IP and ports.
- Projected uptake of Sensor-Networks using 6LoWPAN and Machine to Machine (M2M) communications.
- IPv4 Public address depletion
- IPv4 Private address depletion
- Provider-hosted IPv6 services/content that can reduce private IPv4 address usage
- Existing CGN solution is limited by available IPv4 addresses
- IPv6 must be the way forward to ensure growth of the business

Telstra is committed to introducing IPv6 into its Mobile Network, with testing happening for the past 3 years while the technology is maturing from our providers. CGN is part of this strategy during the transition.

STRATEGY

STRATEGY

Acknowledgement that CGN will NOT resolve the IPv4 depletion problem and IPv4 depletion issue will not disappear and be manageable by using only Carrier-Grade NAT

Deploy IPv6 in the infrastructure

Deploy CGN at the Internet Border Router with NAT64

STRATEGY
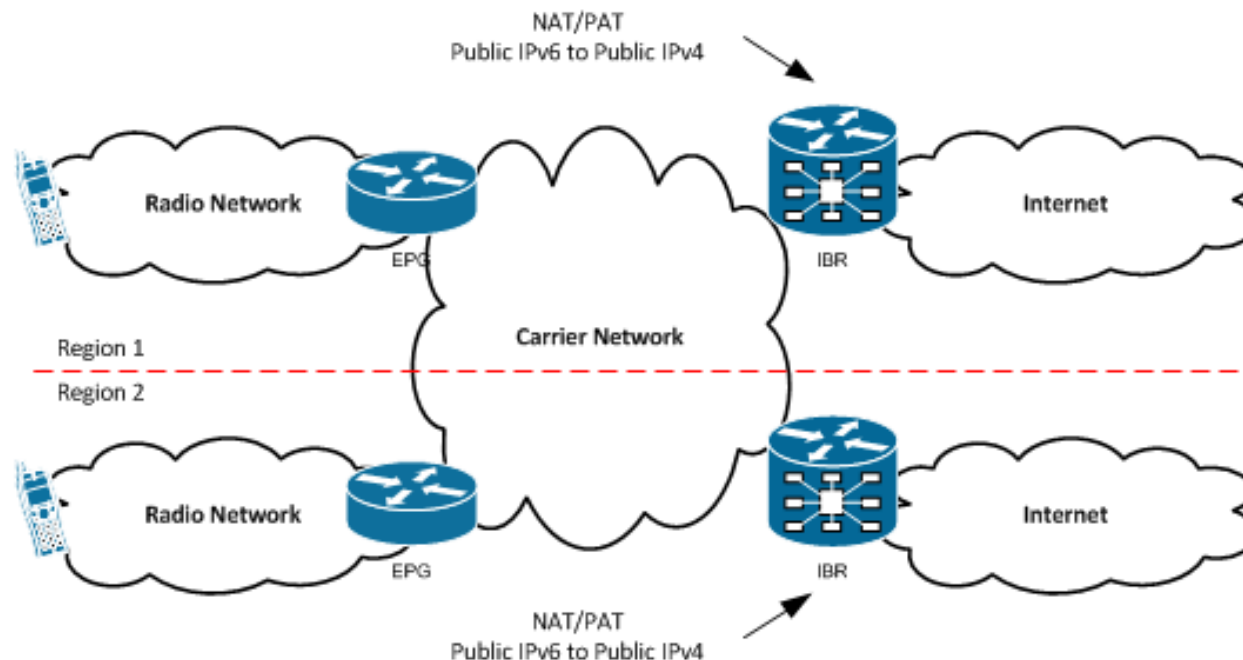
Introduce a DNS64 function into DNS resolvers/forwarders

Connect user devices using Single Stack IPv6

- HLR = IPV4, IPV6+DS
- HSS = IPv4v6
- MMS/SGSN = DAF set
- PGW/GGSN = IPv4v6

Implement 464XLAT on the user devices

- Samsung Note 3 (Android 4.3)
- Samsung Galaxy S4 (Android 4.3)
- Samsung Note 10.1 2014 (Android 4.3)

Begin enabling SP content with native IPv6 support

Ensure there is IPv4 fallback

CONSIDERATIONS FOR THE FUTURE

CONSIDERATIONS FOR THE FUTURE

- You can begin deploying IPv6 today in the Core!

- Networks with IPv4v6 PDP enabled should not have DNS64 enabled simultaneously. Networks with IPv6 PDP only enabled must have DNS64 enabled.

- Begin looking at enabling your content to support native IPv6

- CGN may be required to extend the IPv4 address depletion. Don't be afraid to use it but don't be over-reliant on it – the end goal is always native IPv6. CGN will not prevent the inevitable!

- Devices on Single Stack IPv6 must support 464XLAT – until all applications have native IPv6 support and IPv4 literals disappear from the internet.
    - Push your device Vendors to support 464XLAT as a standard release
    - Push for devices that support IPv6 and IPv4v6
    - Make sure you include RFC6555 (Happy Eyeballs) as a requirement for DS devices

- We need all Mobile operators to support 3GPP R8 and above so the transition to support IPv6 international roaming is simplified in the future.

- For the immediate next 2-3 years, devices when roaming should default back to IPv4. (debatable!).

QUESTIONS?

CONTACT

Sunny Yeung
Senior Technology Specialist
Telstra Wireless Data Engineering

Sunny.Yeung@team.telstra.com