

IPv6 Progress Status

IPv6 Task Force Meeting 11

16th May 2012

Why IPv6?



Why IPv6?

IANA global IPv4 address space depleted – Feb 2011

RIPE-NCC IPv4 allocations expected to deplete – August 2012

In some cases IPv6 needed for long-term service continuity after IPv4 is exhausted



IPv6 transition approach

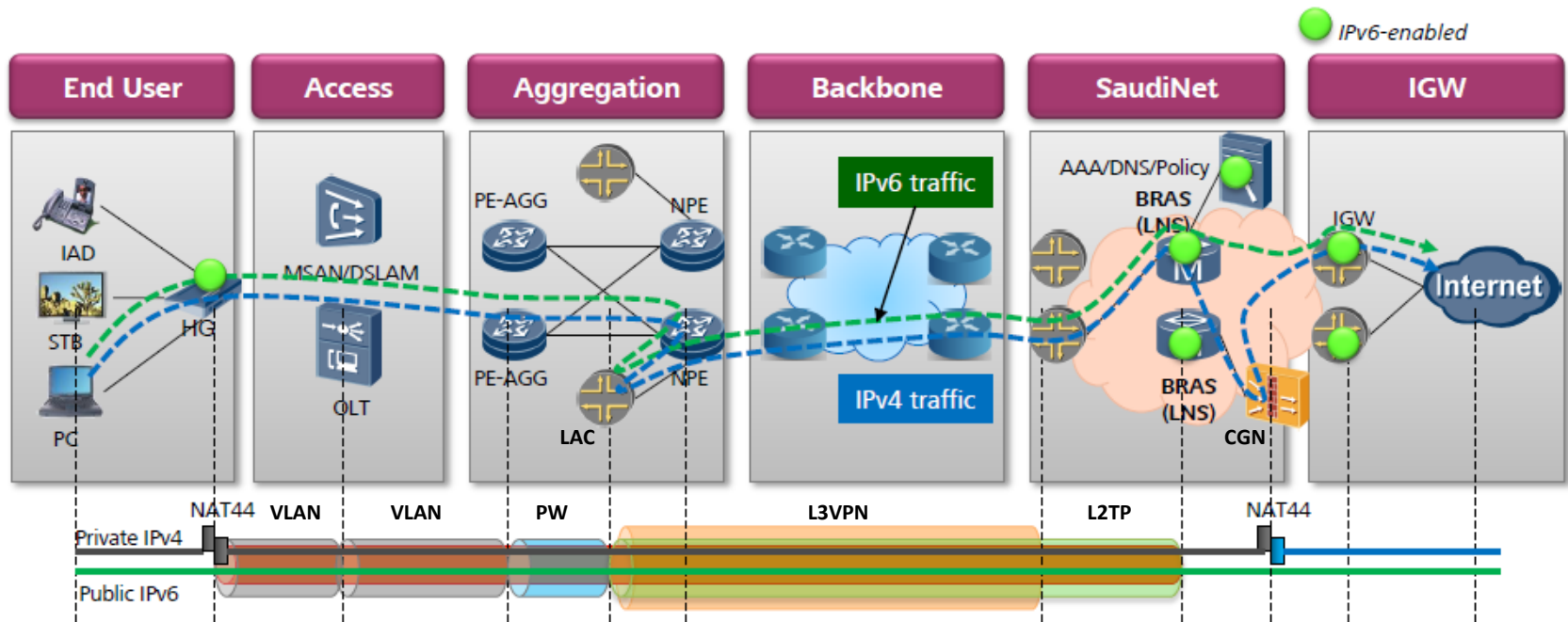
Prioritized (service-by-service) approach to IPv6 transition :

- Services most impacted by IPv4 exhaustion to adopt IPv6 first (e.g. HSI)
- Customers requesting for IPv6 connectivity (e.g. L3-VPNs, International Peering)
- Wall-gardened services (e.g. IPTV, VoIP) – needs business case

HSI Transition Mechanisms - Operator Benchmarks

Operator	Access Type	Transition Mechanism	Status
Comcast (USA)	Fixed (Cable)	Dual-Stack	Commercial
China Telecom	Fixed (DSL)	Dual-Stack + CGN	Commercial
Internode (Australia)	Fixed (DSL)	Dual-Stack	Commercial
Magyar (Hungary)	Fixed (DSL)	Dual-Stack	Commercial
Verizon	Fixed (FTTH)	Dual-Stack	Trial
TM (Malaysia)	Fixed (DSL)	Dual-Stack + CGN	Trial
Maxis (Malaysia)	Fixed (DSL)	Dual-Stack + CGN	Trial
Vodafone (Italy)	Fixed (DSL)	Dual-Stack + CGN	Trial
Omantel	Fixed (DSL)	Dual-Stack	Trial
Maroc Telecom	Fixed (DSL)	Dual-Stack	Trial
Free (France)	Fixed (DSL & FTTH)	6RD	Commercial
Softbank (Japan)	Fixed (DSL & FTTH)	6RD + CGN	Commercial
M1 (Singapore)	Fixed (DSL)	6RD	Commercial
AT&T	Fixed (DSL)	6RD + CGN	Trial
China Telecom	Fixed (DSL)	DS-Lite (variant)	Commercial
FT/Orange	Fixed (DSL)	DS-Lite	Trial
Jazztel (Spain)	Fixed (DSL)	DS-Lite	Trial
STC	Fixed (DSL & FTTH)	Dual-Stack + CGN	Pre-commercial

STC (Dual-Stack + CGN) HSI Model



- Dual-stack PPP session tunnelled from HG (DSL modem/ONT) to BRAS
- CGN to be added on onset of IPv4 depletion
- New IANA reserved space (100.64.0.0/10) between CGN & modem (RFC 6598)
- Dual-stack HSI DSL pilot on-going in live network

Summary Of Ongoing Activities

Service	Status	Remarks
HSI (DSL)	Live Pilot	<ul style="list-style-type: none">• Pre-commercial
HSI (FTTH)	Lab trials (ONT)	<ul style="list-style-type: none">• Dual-stack + CGN model
HSI (Mobile)	Lab trials	<ul style="list-style-type: none">• Dual-stack PDP testing on-going - dongles• NAT64 – limited potential – new variants emerging• Major issue - limited IPv6 on mobile handsets
L3-VPN	Multi-vendor trials	<ul style="list-style-type: none">• Limited customer demand
IPTV & VoIP	Under study	<ul style="list-style-type: none">• Runs on private IPv4 space - no business case for full migration• IPv6 will impact the whole infrastructure• Complex interworking with legacy (IPv4)

Thank You