

IPv6 Progress Status

IPv6 Task Force Meeting 12
21st November 2012

Eng. Salah Al-Mofleh

STC
الاتصالات السعودية



Why we need IPv6?



IANA global IPv4 address space depleted – Feb 2011

RIPE-NCC IPv4 allocations - on last /8

For some STC services IPv6 is needed for long-term service continuity and growth

Why IPv6?



Phased service-by-service approach:

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

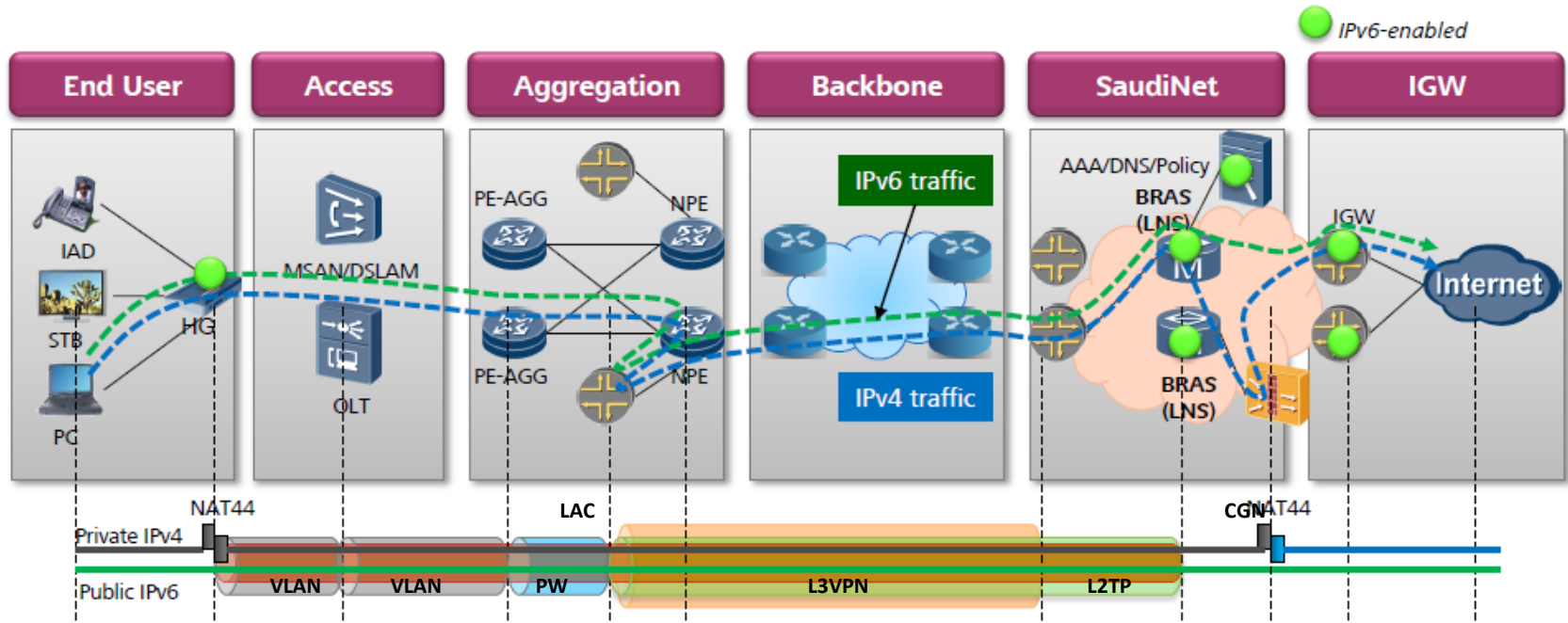
IPv6 transition approach



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	Commercial
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

IPv6 Requirements for 3rd-Party DSL Modems

- Dual-stack IPv4/IPv6 PPP session over the WAN
- SLAAC on WAN to receive a **/64 IPv6 prefix** for the PPP session
- Preferably DHCPv6 Prefix Delegation on WAN to receive a **/56 IPv6 prefix** for LAN assignments – otherwise CPE must be able to assign hosts /64 from point-to-point



Summary Of Ongoing Activities

Service	Status	Remarks
IPv6 International Transit	Launched	<ul style="list-style-type: none">• Live customers: ISPs, Operators
HSI (DSL)	Pre-commercial	<ul style="list-style-type: none">• Dual-stack pilot service on STC live network
HSI (FTTH)	PoC trials	<ul style="list-style-type: none">• New ONTs being evaluated
HSI (Mobile)	PoC trials	<ul style="list-style-type: none">• Dual-stack PDP testing on-going - dongles• NAT64 – limited potential – new variants emerging (464XLAT, MAP)• Key issue - limited IPv6 on mobile handsets
L3-VPN	Multi-vendor PoC trials	<ul style="list-style-type: none">• Limited customer demand seen for VPNv6
IPTV & VoIP	No business case for full migration	<ul style="list-style-type: none">• Runs on private IPv4 space - IPv6 will impact whole infrastructure – CPEs, ANs, IP/MPLS, OSS/BSS• VoIP will have complex interworking with legacy (IPv4)

Thank you

