

San Francisco IETF: Report on IPv6



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Overview

Google IPv6 Implementors Conference

IETF meeting

- "Net11"
- IPv6 tasks at the IETF
- Progressing the IPv4-IPv6 co-existence work
- "Fractional addresses" (SHARA BOF)
- IPv6 NATs (6AI BOF)

Google IPv6 Conference

- Conference about practical deployments
- The list of real, good success stories was short, but not empty:
- HE, NTT, Free
- Google, Microsoft
- We talked a lot of issues



Google campus



MS Internal Network

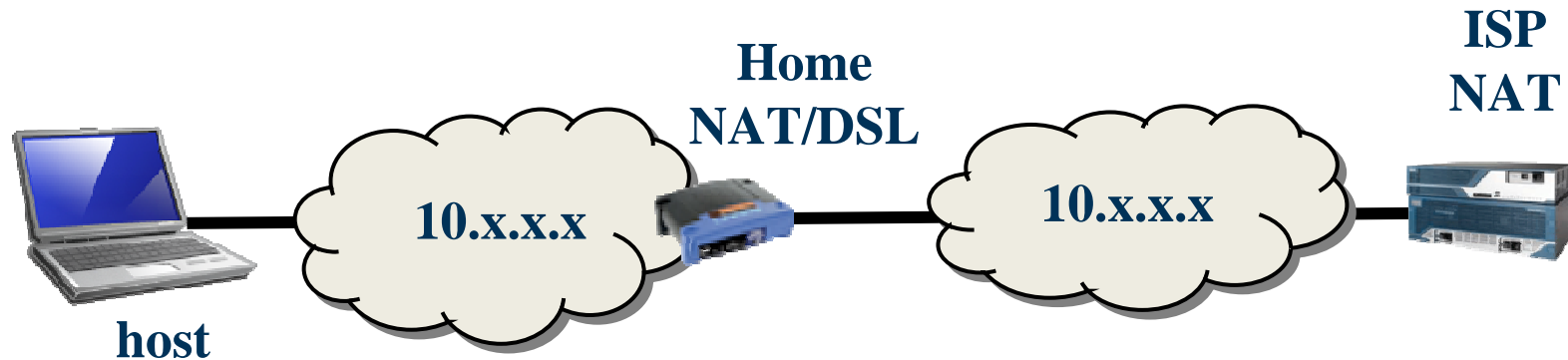
Free Schedule

In less than 5 weeks !

- **Before nov 2007:** at FREE, "no short term need for IPv6"
- Nov 7th: 6rd principle presented by RD to FREE
- Nov 7th at night: FREE asks for an IPv6 prefix => /32
- Nov 18th: "Done!" IPv6 prefixes confidentially available
- Dec 4th: Evaluation after early trials
- Dec 11th: Press release – "IPv6 unicast available" (/64)

Opt-in service to **> 1.5 million customer sites**

”Net 11”



- NET10 = 10.x.x.x = private address space
- Some providers would like a new allocation for running double NAT
- But that would burn a sizeable chunk of the remaining address pool
- Dismissed!

IPv6 Tasks at the IETF

- A lot of activity!
 - WGs, ISOC panel, press coverage, private discussions with customers and vendors, ...
- IPv6 protocol specifications
 - Maintaining the specifications for bugs etc
- Most of the IETF work is protocol version agnostic, but some affects IPv6 feature parity
 - SAVI
- IPv6 work emphasis is now on co-existence and specific deployment scenarios

IPv4-IPv6 Co-Existence Work

- **BEHAVE – translation**
 - Keeping IPv4 alive while at the same time moving forward with IPv6 (Dual-Stack Lite)
 - Adopted documents
 - Decided which type of prefix to use
- **SOFTWARE – tunnels**
 - Enabling networks to use IPv6 before all other networks use it as well (Translation)
 - Dual Stack Lite progressing (not ready yet)
- **SHARA BOF – fractional IPv4 addresses**
 - Unclear if this will be pursued

IPv6 NATs

- An IPv6-to-IPv6 translation device could, in theory, eliminate 80% of the problems of IPv4 NATs
- Not clear yet if this is
 - A) a better way to do a bad thing,
 - B) solution to BGP scaling & hunger,
 - C) or a blasphemy
- The world is not as simple as protocol idealists think
- May not go forward?



Summary

- Prior focus has largely been in the basics
- Emphasis is now on co-existence and specific deployment scenarios
- But most of the deployment effort is practical – vendors, providers, planning, configuration
 - “Why should I deploy IPv6?” is slowly being drowned out by “How do I deploy Ipv6?”
 - Earlier: *“Do we really need IPv6? What's the business case?”*
 - Now: *“I need ingress filtering, load-balancing, MIB support, better firewalls...”*