Unmanaged Networks, tunnels, etc.

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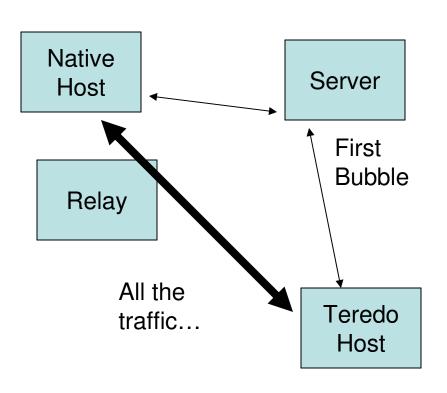
Issue: automatic vs. configured

- Automatic tunnels allow for automatic deployment, which "applications" like
 - But automatic solutions tend to work better between users of same technology, require relays towards "native IPv6" or other technologies
- Configured or brokered tunnels allow for more controlled service, often better quality
 - But the economics of providing tunnel services mostly make sense if provided within a single ISP
 - And it is not automatic…

Tunnel configuration needs work

- Current "tunnel broker" RFC is "conceptual" in nature
- Need to nail at least one scenario
 - Tunnel broker is provided by the ISP
 - ISP customer easily gets the parameters
 - Tunneling mechanism works through NAT

Issue: Teredo relays



 Native to Teredo requires relays

Issue

- No Teredo relays in the network
- Every native host has to implement a Teredo Relay
- This creates a "lock-in"

Solution

 Implement Teredo relays in the network and run them until Teredo is retired?

Do we have some consensus?

- Tentative algorithm
 - If native connectivity, use it
 - If tunnel service is available, use it
 - If 6to4 is available, use it
 - If everything else fails, use Teredo
- OK, some [including Pekka] would rather never see people using Teredo or 6to4…
 - But then, they should provide native or tunnel service!

Incentives to "move forward"

Stable addresses

 Native and tunnel solutions provide stable addresses, adequate for entry in DNS, usage in web servers, etc.

Better performance

 Native IPv6 has lower overhead, does not involve relays, etc.

Multicast

 Neither 6to4 nor Teredo support multicast, configured tunnels could, native should.

Next steps

- Update the "unmaneval-00" draft
 - Incorporate the "tunnel consideration" text
 - Revise the existing text to reflect the consensus
 - Move all tunnel comparisons to the tunnel consideration section
 - Recommend work on Configured and Opportunistic Tunnels over IP and UDP
 - Example of opportunistic over IP: 6to4,
 - Example of opportunistic over UDP: Teredo