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

Solution

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

Issue

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