Notes from the IAB Multihoming BOFs

Greater Demand

Larger Halls

More Gigs

Larger Overhead

Bigger Organization

More Equipment

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RIPE 52
Istanbul, Turkey
http://www.1-4-5.net/~dmm/talks/RIPE52/bof_updates
http://www.1-4-5.net/~dmm/talks/RIPE52/bof_updates.pdf
Agenda

- NANOG 35
- APRICOT 2006
- Futures
Issues from NANOG 35

- Issue 1: End-System Complexity
- Issue 2: DNS Latency
- Issue 3: Inbound Traffic Engineering
- Issue 4: IPv6 Routing and Addressing Architectures
The issue here, articulated by Vijay Gill, is basically that assuming an industry standard 2% churn/month on low margin customers, one support call can destroy the margin on that customer for the expected lifetime of the customer.

The concern here is that the dynamically changing ULIDs and locators will cause new and harder to diagnose problems, resulting in an increased frequency of calls to the help desk.

- Which in will either hurt or destroy the margin on the customer
Issue 2: DNS Latency

- Several content providers expressed the concern that shim6 will require sifting though the DNS looking for viable ULID/locator pairs.

- In reality, shim6 doesn’t require this. Rather, client connects to the server just like today.
  - i.e, the application tries connect to each IPv6 address in turn until one succeeds. Nothing new for shim6 here.
  - At some (later) point in time, shim6 at either end of the communication determines that some heuristic applies (e.g., number of packets between the pair of IP addresses; NOTE: not per TCP connection).
  - That point in time could be *never*
First off, in a shim6 context, inbound TE won’t be solved by shim6 itself but by an extra component that dynamically manages shim6’s preferences.

And that component can use a site wide policy set by the site’s operator.

Future work item for the shim6 WG

That being said...
Issue 3: Inbound TE, cont

- Issues raised at NANOG 35 included:
  
  - Current multi-homing is site based not host based. Host based multi-homing does not lend itself to current operational processes, as there are
    - A large number of hosts,
    - Complex routed network, and
    - End users do not own network/traffic engineering preferences

  - Note also that TE decisions are currently made and configured at the network level
    - As opposed to in all end hosts
Issue 3: Inbound TE, continued

- The Internet facing routers and end hosts may not be managed by the same group of operators.

- Operators want to manage the inter-AS TE policy in a few well-defined places in their networks.
  - As opposed to in every host.

- Transit AS TE capabilities may be a requirement.
Finally....

- There was some concern that TE (as practiced in IPv4) won’t scale in any event, so the lack of a TE solution for shim6 was seen by some as an unfair criticism

- Jason Schiller has a nice set of slides on this topic

- Issues In Traffic Engineering with SHIM6
  - Extended Shim6 Design for ID/loc split and Traffic Engineering
  - draft-nordmark-shim6-esd-00.txt
  - draft-meyer-shim6-and-te-00.txt
    Not yet finished; Please see me later if you’d like to help/contribute
Issue 4: IPv6 Routing and Addressing Architectures

- shim6 was designed for the currently available routing and addressing architecture

- A scalable routing and addressing architecture for the Internet is still an open problem

- However...it will be several years (best case) before we could deploy any new technology in this space
Issues from APRICOT 2006

- One important "Stat" about the APRICOT BOF
  - Had relatively few participants from the region

- Session not very interactive
  - As a result, not too much discussion of shim6

- Discussion issues included
  - RIRs and address allocation issues
  - Future routing and addressing architectures
Futures

- The plan is to continue the xNOG BOF series
  - On this and possibly other topics
Questions/Comments?

Thanks!