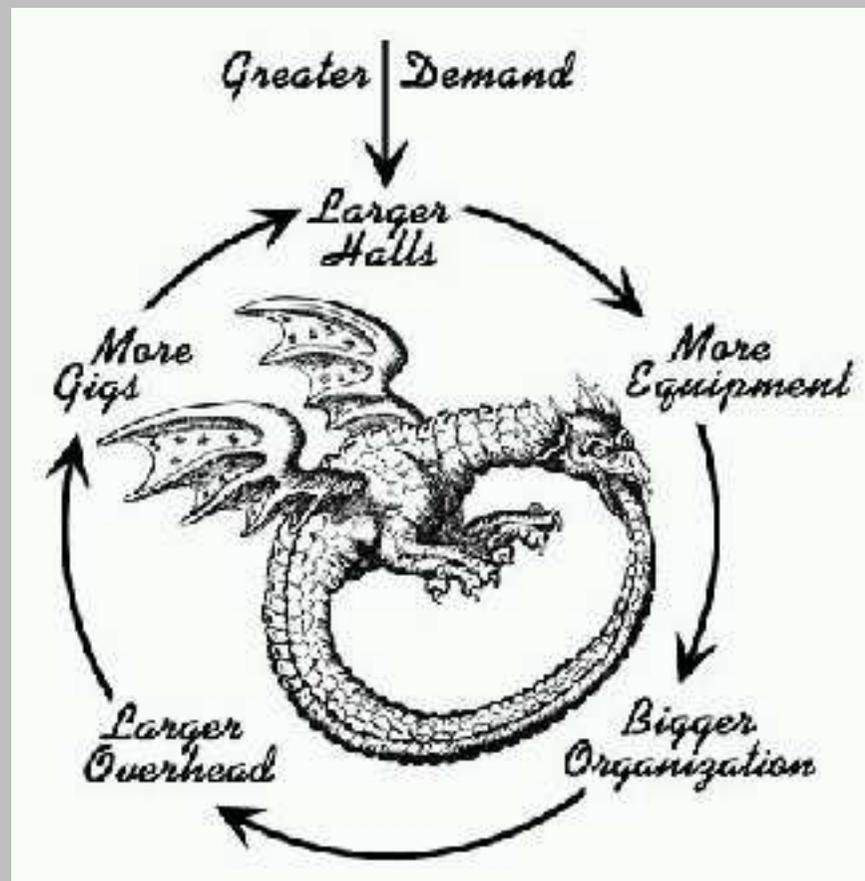


# Issues from the IAB Multihoming BOFs



# Agenda

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- NANOG 35

- APRICOT 2006

- Futures

# Issues from NANOG 35

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- Issue 1: End-System Complexity
- Issue 2: DNS Latency
- Issue 3: Inbound Traffic Engineering
- Issue 4: IPv6 Routing and Addressing Architectures

# Issue 1: End-System Complexity

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- 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

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- Several content providers expressed the concern that shim6 will require sifting through 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\*

# Issue 3: Inbound Traffic Engineering

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- 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

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- 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

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- The Internet facing routers and end hosts may not be managed 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

# Issue 3: Inbound TE, continued

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## ■ 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

<http://www.nanog.org/mtg-0510/pdf/schiller.bof.pdf>

## ■ 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

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- 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

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- 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
  
- Dissussion issues included
  - RIRs and address allocation issues
  - Future routing and addressing architectures

# Futures

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- The plan is to continue the xNOG BOF series
  - On this and possibly other topics
  
- Next potential BOF: RIPE 52
  - April 24 - 28 in Istanbul, Turkey

# Questions?

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Thanks!