IPv6 CDN

Tom Coffeen
NANOG46
June 2009
CDN IPv6 Adoption Drivers

- Content Providers and Subscriber Networks desire network transparency for content delivery.
- Recognition that IPv4 adaptive approaches like CGN may greatly reduce design flexibility for CDN products and increase capital and operational expenses.
- Acceptance of the imminent scarcity/non-availability of a resource critical for growth and product/design flexibility.
CDN - but whose *network*?

- The network architecture to deliver content is not uniform among CDNs
- Control of network between sites is a key differentiator between Limelight and its competitor
- Limelight’s IPv6 deployment must touch both *core* and *edge* networks
Core IPv6 Deployment Challenges

- “Nice core you got here. Be a shame if something happened to it…”
  - Requirement of maintaining Stability of IPv4 Production Network
- IGP selection (and reselection)
  - “OSPFv3, no…wait ISIS”
- Vendor Support or Platform Instability
- Transit/Peering
- “It’s 10pm do you know where your \(3 \times 2^{96}\) IP addresses are?”
  - Address Assignment/Allocation Tracking
IPv6 Allocation Tracking

- HaCi – open source and actively developed – “It’s better than a spreadsheet!”
Edge IPv6 CDN Deployment*

- **Server Support**
  - “Bet you don’t remember when you compiled v6 support out of the kernel?”

- **Integration with Core**
  - *What works today?*

- **DNS Architecture**
  - The v4/v6 client resolver issue…

- **Maintaining Stability of IPv4 Production Network**
  - *Intermediate DNS architecture – pros and cons*

*Big thanks to Limelight Network’s Colin Rasor…*
IPv6 DNS Architecture
Tasks Remaining

- Full OSS Support
- Operations and Administrative Integration of new protocol
- Test Under Load
- Full Support in IPv6 of Existing IPv4 Products
Questions

Tom Coffeen

tcoffeen@limelighthnetworks.com