

IETF 93 Prague: IPv6 Design Choices

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Restate Purpose

- Document is intended to be descriptive (not prescriptive) in highlighting some basic IPv6 design options (routing focused)
- Assumes most readers have a working knowledge and network designs based on IPv4

Expanded Purpose

- Expansion to explicitly include Enterprises and their use cases (in addition to Service Providers)

Feedback: WGLC Early 2015

- Areas of need and/or consideration
 1. EIGRP (used widely in production networks)
 2. RIPng inclusion (used in edge cases / operator networks)
 3. Need/desire to improve IGP table (expanded operator data – include enterprise)
 4. Address use/selection: ULAs, GUAs and Link-Local

Need to expand and clean up text, descriptions and options

Big Changes from -07 to -08

- Added section about **address choice**
 - Why:
 - based on comments we received in WGLC, use of ULAs, address options, and fixation on hop-by-hop.
 - ISP is different than Enterprise view – ensure focus on both
 - What:
 - Written in a way to cover dual-stack networks (in addition to IPv6-only networks). Term “private” to mean both RFC1918 and ULAs (given strong operational similarity)
 - address new section, written quickly, needs updates

Changes from -07 to -08

- Rewrote the **IGP Choice section** (operational data next revision)
 - Why:
 - Larger audience (enterprise) would benefit for expanded discussion
 - input from enterprise folks, inclusion of EIGRP (enterprise) and RIPng use case (operator edge)
 - What:
 - Rewrote section, expanding IGP's to include EIGRP and new sub-sections on IS-IS Topology mode and RIPng

-08 Discussion/Feedback 1

- Does working group agree on inclusion of Enterprise and EIGRP?

-08 Discussion/Feedback 2

- Feedback on list on use of NAT in options/text and PI text (Brian C and Mark S)
 - Not part of IPv6 architecture (multi-address is)
 - ULAs for internal connections, PI/PA for external (if needed)
 - NPTv6 reference objection – it's experimental
 - Authors' Response:
 - Section / table written for dual-stack, so NAT44 is valid on IPv4 side
 - We do have discussion of combination modes (which don't remove all drawbacks)
 - Just trying to be practical in our options/text (cover cases which can occur) – renumbering is a serious concern (cost, time, effort)
 - Text already addresses PI – notes you may be “unable or unwilling” to obtain it

-08 Discussion/Feedback 3

- Mention/Use of RFC1918 and other IPv4 artifacts in text (Brian C and Mark S)
 - Authors' Response:
 - We are talking about dual-stack networks – so association is valid

-08 Discussion/Feedback 4

- RIP reference (RFC2080)
 - “RIPng”, text nit

- Authors’ Response
 - Will fix

Moving Forward

- Desire to revise document to -09 soon after IETF93
- Close on WG feedback / consensus on key feedback points
- Re-initiate WGLC and/or proceed to IESG for publishing