

IPv6 Support Within IETF work

draft-george-ipv6-support-01

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Why this draft?

- IPv4 is mature (30+ years of development)
 - Mature = complete
 - Mature also = obsolete
- But...Declaring IPv4 formally historic is premature
- It is time to signal the industry that we are done “improving” IPv4

Why this draft?

- Formally declaring IPv4 “baked” allows IETF and the industry to focus on IPv6
 - Parallel development and maintenance (IPv4 + IPv6) requires more resources
- Reinforce the idea that:
 - IPv4-extension is a temporary solution
 - IPv6 is not optional
 - Eventually, new features might be IPv6-only

What does “done” with IPv4 mean?

- Requires a higher bar for additional IPv4-specific work in the IETF
 - Fixing **documented** problems experienced in **real** networks
 - **NOT** purely theoretical ones
 - Making it easier to decommission IPv4

Generally, the IETF should be focused on two goals as it relates to IP version support:

1. Transition technologies that enable IPv6
2. Complete support for IPv6-only operation

Open questions

- Are we actually done with IPv4 extension?
 - Defining protocols, not the actual transition
 - Question is of critical mass – do we have at least one viable solution for each major use case?
 - DS-Lite
 - NAT64
 - CGN
 - Is a reference to A+P needed in the draft?
 - A+P is an Experimental RFC (6346)
 - Multiple competing derivative works w/o consensus
 - MAP, 4rd- {E,T,U}, divI-PD, stateless 4over6, etc

Essence of the Draft

- IETF SHOULD continue to update IPv4-only protocols and features to address vital operational or security issues.
- IETF work SHOULD update existing IPv4 to IPv6 transition and interworking technologies as necessary to address operational problems encountered during the implementation phase.
- IETF work SHOULD continue to make updates to IPv4 protocols and features to facilitate IPv4 decommissioning

Essence of the Draft pt 2

- IETF work that is not related to the above exceptions MUST be IP version agnostic (because it is implemented above the network layer) or MUST explicitly support IPv6.
- IETF SHOULD NOT initiate new IPv4 extension technology development.
- IETF work MAY support IPv6-only applications and protocols, especially in cases where supporting the protocol or feature in IPv4 would be difficult or impossible.
- IETF work SHOULD continue to update IPv4-only protocols and applications to support IPv6 as necessary and appropriate.