

RFC6434-bis

IPv6 Node Requirements update

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Context

- Two previous IPv6 Node Requirements RFCs:
 - RFC4294, April 2006
 - RFC6434, December 2011
- New -bis document history:
 - First -00 version published October 2016
 - Draft adopted by WG after IETF98
 - Changes from 6man Chicago session made for -00 WG version
 - Current version is draft-6man-ietf-rfc6434-bis-01
- Seeking to sync with draft-ietf-v6ops-ipv6rtr-reqs-00
 - But noting focus of 6434-bis is hosts rather than routers

Changes/decisions after/at IETF98

- Includes:
 - MLDv2 (and SSM) is MUST, say nothing about MLDv1
 - RFC 8106 MUST for clients (to ensure at least one method supported for DNS configuration)
 - Mobility text added back
 - Added text on RFC7844 for DHCP anonymity profiles (with no mention of configurability)
 - Kept RFC 1981 as a SHOULD; retained informal PLPMTUD (RFC4821) reference
 - DHCP-PD was not included

New changes since IETF98

- Includes:
 - Re-organised various sections, including addressing and other configuration
 - Some text on constrained devices added
 - Added text on YANG/NETCONF
 - Various ID nits fixed
 - mDNS/DNS-SD text added
 - Added RFC8028 guidance as a SHOULD if device may be multihomed
 - ECN RFC3168 added as a SHOULD
 - Noting content of draft-ietf-tsvwg-ecn-experimentation-03

Open issues

Text on IPv6 EH processing by receivers

- Topic raised on 6man list by Tom Herbert
 - https://mailarchive.ietf.org/arch/msg/ipv6/yq8MtabkHk0ZEIH_smMeAynHF4I
- Proposal to add text about how a receiving host processes EHs
- *“Adding configurable limits to the number of options that are accepted at a destination host.”*
- Proposal: Add text on this topic to the draft. Wary of including specific limits, so suggest we add general text (to be decided), and that 6man starts a separate draft with more specific guidance

Text on dangers of 1280 MTU

- Raised by Mark Andrews in Berlin 6man
- Documented in a comment by Geoff Huston on his own fragmentation blog piece
 - <https://blog.apnic.net/2016/05/19/fragmenting-ipv6/>
- *“The message seems pretty clear that for UDP in IPv6 it’s best for a sender to use a large MTU if they can, in order to avoid gratuitous fragmentation-caused packet drop.”*
- Proposal: Add text to express this sentiment in RFC6434-bis, for UDP IPv6. But need specific text.

Cite unique IPv6 prefix per host draft

- The draft already mentions RFC7934 on availability of multiple addresses
- Would be good to add example text; the unique IPv6 prefix per host draft documents real-world deployments
- Proposal: Add citation to draft, and say hosts SHOULD support the functionality described in draft-ietf-v6ops-unique-ipv6-prefix-per-host-01 (which is BCP status)

Router redirect host processing a MUST?

- Question raised by Tim Winters as we reviewed the -bis draft
- It seems from testing hosts that all do process router redirects
 - RFC4861 says SHOULD in section 8.3
 - Should that be upgraded to a MUST?
- Proposal: Leave it as a SHOULD in RFC6434-bis, but review RFC4861 text at next opportunity

Review by Brian Carpenter

- Update RFC2460 to RFC8200
- Update RFC1981to RFC8201
- Remove IP over ATM (keep Frame Relay)
- Move PPP to previous list
- Since RFC 8028 updates rule 5.5 from RFC 6724 implementations SHOULD implement this rule.
- Add nothing about UDP tunnelling
- In EH text, s/processed/treated
- Keep jumbogram text
- Make RFC8208 normative
- Suggested text for RFC7217, but we could use RFC8064
- Section 14 - require BCP198 (RFC7608) support

3GPP and RFC7066

- Comments from Mohamed (“Med”) Boucadair
- Made suggestions to clarify 3GPP-related text
 - Important point is implementers have pointers on where to look for guidance beyond RFC6434
- Proposal:
 - Add reference to RFC6459 and RFC7849 to Section 12
 - Be clear that RFC7066 trumps 6434bis
 - Add two or three examples of the additional requirements for flavour (e.g. RFC7828, RFC6603, ...)
 - But do not replicate the specific MAY/SHOULD/etc

Keep Jumbogram text as is?

- The -bis draft currently says:
 - *“To date, few implementations exist, and there is essentially no reported experience from usage. Consequently, IPv6 Jumbograms [[RFC2675](#)] remain optional at this time.”*
- Is this still true? No harm to leave in?
- Proposal: Keep section on Jumbograms

Update DHCP vs RA options text

- Currently discussed in Section 8.4
- Proposal:
 - RFC8106 is a MUST
 - Stateless DHCPv6 SHOULD be supported if expect to use options other than DNS
- (reality is we seem to be heading to common minimal functionality in hosts and routers through RAs and RFC8106... but what to say here???)

Support for stateful DHCPv6

- Currently a SHOULD in Section 6.5
- Proposal: Keep as is

Other comments?

- Are latest changes acceptable?
- What other changes should we discuss?
- Comments?
- [Note that, as agreed at IETF98, we'll decide on Informational vs BCP status once the document is finalised.]
- [Also need to see if a RFC4291 update appears.]