RFC 6434 update: IPv6 Node Requirements

Tim Chown, tim.chown@jisc.ac.uk
Tim Winters, twinters@iol.unh.edu
John Loughney, john.loughney@nokia.com

6man WG, IETF 97, Seoul, 15th November 2017
Rationale

• RFC 6434 was published in 2011
• It obsoleted RFC 4294, published in 2006

• IPv6 deployment experience has grown significantly in the last 5 years
• Many new RFCs published in 6man since 2011
  – And in related groups – v6ops, dhc, opsec, etc.

• So it seems timely to refresh the IPv6 Node Requirements document
Current status

• Have spoken to RFC 6434 authors and determined new author list

• First draft of RFC 6434 –bis published

• No original text has been edited, yet
  – Except authors and acknowledgements

• There will be additions, changes and deletions to make
Methodology

• We have reviewed RFCs published since 2011
  – Focusing on 6man, v6ops and opsec
  – There may be other WG publications to consider – help welcome!

• We have tried to identify sections of text that may no longer be relevant, and new topics that we might include

• From this, we have indicated potential “high level” changes through comment paragraphs delimited by **BIS … **
  – Currently 44 instances in the document

• We would like to get consensus on changes before making specific edits in future drafts
Examples of changes

• Updates for RFC 2460-bis/1981-bis/4291-bis
• Atomic fragments; RFC 6946
• Various IPv6 EH related RFCs
• Various optimisations to NUD, RA, RS, DAD
• Address selection, new RFC 6724, and behaviour
• New: 6LowPAN – RFC 4919
• Remove A6 completely
• RFC 7278 on /64 use in 3GPP
• Updates to crypto algorithms, e.g. RFC 7321
6man mail list feedback

• Add more detail on transition methods?
  – Thoughts: No; not needed – separate draft?

• Mention draft-ietf-6man-multi-homed-host, which updates RFC 4861 behaviour
  – Thoughts: Yes, add

• Add two Appendices:
  – 1) List of obsoleted documents
  – 2) List of “other reading” – useful non-normative documents
  – Thoughts: Yes to both; suggestions for (2) very welcome
Some proposed higher level changes

- Add note on use of 1280 MTU, and PLMTUD
- Add note on ‘Why /64?’ (RFC7421)
- Clarify RFC 4862 / RFC 7217 / RFC 4941
- Add note on support for DNS-SD
- Add Happy Eyeballs (or is that an application issue?)
- Add new section on constrained devices
- Add section on L2 smarts (RA Guard, etc)
- De-emphasise Jumbograms (RFC 2675)
- De-emphasise SEND – support in OSes seems limited
- De-emphasise mobility. Host MIPv6 not in use?
New router requirements draft

• Interesting draft published prior to Seoul IETF

• We have spoken to the authors and will be trying to keep our changes in sync with this

• Contains much practical guidance around deploying and managing router devices

• No detailed comparison/review yet
Next steps?

• Anything else to consider?

• Planning -01
  – May just update the proposed changes
  – Then start making real changes to text in -02
  – But open to suggestions

• Any comments / questions?