Updates to RFC 2461/2462

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Background and objective

- Several issues and bugs have been raised against the spec
 - including security/mobility issues
- Goal: revise RFC2462 and produce another DS RFC
- Most of the work is related to bug fixes and increase in clarity
- Recycle into DS puts restrictions on the new functions that can be added
 - keep compatibility with existing implementations
- 19 issues raised so far and quickly presented in the following slides

Easy issues

- 2. Dead Code in Addrconf DoS Prevention
 - A part of the logic in Section 5.5.4 e) was redundant
 - Suggestion: simply remove it
- 3. A corner case about inbound NA processing
 - Suggestion: editorial clarification
- 4. Unclear text about StoredLifetime
 - Suggestion: editorial clarification
- 5. References to site-local addresses
 - They are going to be deprecated
 - Suggestion: remove the references

Relatively controversial issues (1/4)

- 6: Source address selection issues wrt deprecated addresses
 - RFC2462 does not talk about address selection details
 - e.g: link-local&non-deprecated vs global&deprecated?
 - Suggestion: add a reference to RFC3484
- 7: Deprecated address handling
 - The semantics of "new communication"
 - Consensus: incoming TCP connection is not "new"
 - Suggestion: use proposed text on ML
 - also clarify deprecated addresses specified by an app

Relatively controversial issues (2/4)

- 8. Semantics about the L=0 and A=1 case
 - An unusual case: addr configurabale but not on-link
 - Suggestion: not change the spec, based on the discussion on ML
- 9. Using stable storage for autoconf'd addr
 - Retain the addr and expiry timers for stability
 - Suggestion: mention it without any mandated behavior

Relatively controversial issues (3/4)

- 10. Issues raised in the SEND req draft
 - send-psreq-04
 - describes DoS possibilities wrt RFC2462
 - points out 'simply use IPsec' is not enough
 - Suggestion: add a summary of the description to security considerations
 - with another possible DoS case
 - (no change in the protocol)

Relatively controversial issues (4/4)

- 11. DAD for IEEE 802.11 devices
 - draft-park-ipv6-dad-problem-wlan-00.txt
 - RFC2462 recommends not to drop a packet simply because the link-layer src is the same as the receiving node
 - IEEE 802.11 does not meet this
 - Suggestion: add a note on this to Appendix A and reference to the draft

Issues that may be controversial (1/5)

- 12. Conflict with the MLD spec about random delay for the first packet
 - RFC2462: if the NS for DAD is the first packet, make a random delay
 - But: an MLD is usually the "first" packet
 - Suggestion: nothing can be done here?
 - just add a note on this?

Issues that may be controversial (2/5)

- 13. DAD related issues
 - Various issues raised
 - DAD delay is not friendly with mobile nodes
 - same argument for the random delay before DAD NS
 - how to optimize DAD, DAD vs DIID
 - Specification is flexibile:
 - SHOULD do DAD for every unicast address
 - MAY choose to skip DAD in some cases
 - should we rather remove the MAY?
 - Suggestion:
 - DAD optimization is not included
 - a separate extension, at least
 - Inclined to make it strict, but may need to be discussed

Issues that may be controversial (3/5)

- 15. The semantics of the M/O flags
 - Use RFC 2119 keywords & which one?
 - What is "the stateful configuration protocol"?
 - If it is DHCPv6, should this document be more specific?
 - Suggestion: it should include DHCPv6, but details need to be discussed
- 16. Whether a (not a host) router can autoconfigure itself using RFC2462
 - a) configure a global address
 - b) configure a link-local address
 - c) configure itself about "other" information
 - Suggestion: a=NO, b=YES, c=NO

Issues that may be controversial (4/5)

- 17. 'Not-yet-ready' status of an autoconfigured address for renumbering
 - is it okay to use deprecated addresses for this purpose?
 - Suggestion: kind of an extension. Out of scope of this update.
- 18. Avoiding interface failure upon DAD failure
 - RFC2462: if a link-local address is found to be duplicated, the interface SHOULD be disabled
 - This may be too strict
 - Suggestion: SHOULD is okay, but MAY allow automatic recovery

Issues that may be controversial (5/5)

- 19. If RFC2462 requires a 64bit IFID
 - Same issue as RFC2461
 - No suggestion so far. Discuss this on ML.