RFC1112bis
draft-eckert-pim-rfc1112bis-02
PIM WG IETF117

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Refresh: Goal / core changes from RFC1112

- RFC1112 specifies “IP Multicast” host stack – extends RFC791
  - Full Internet Standard
- Problems
  - No equivalent specification for IPv6 (some details have other RFCs, e.g.: IPv6 multicast ethernet MAC address range/mapping).
  - Includes spec for IGMPv1 (in appendix), this makes IGMPv1 full standard.
    - But we want to make IGMPv1 historic to ensure everybody implements from now on IGMPv3 and does not think IGMPv1 is equally good (Standard)
      (only allow continued support for backward compatibility – see later slide)
- Solution / text changes in rfc1112
  - Add text for IPv6 (including appropriate references)
  - Remove appendix for IGMPv1, replace by references to IGMPv2/v3
  - Other changes: Add new naming “IP Multicast -> ASM IP Multicast”, versus “SSM IP Multicast” (mention, reference SSM – it shares all the network facing specs of RFC1112 aka: depends on RFC1112 too).

Issue 1 at IETF116 microphone line, diffs for it

- Alvaro: need normative (RFC2119/RFC8174) language
  - MUST / SHOULD / …
  - Alvaros argument: RFC8200 does not have it, caused problems
  - Toerless not aware of any issue issues caused by missing normative text in RFC1112 – for 34 years (RFC8200 age: 6 years).
- However
  - Went through text identifying applicability of normative notion in “must/should” and changed to normative MUST/SHOULD language where it seems applicable.
  - And added standard normative language disclaimer text
  - Consider issue resolved well enough to go forward to WG:
    - WG doc phase can resolve possible differences in opinion about each individual MUST/SHOULD
    - E.g.: did not attempt to MUST/SHOULD for application facing host stack description, only for network facing text - send/receive packets, trigger IGMP/MLD.
    - No long history of normative text for host stack AFAIK (TAPS did something, need to check if/how normative language was used). But could be considered to be a new experiment.

Issue 2 at IETF116 microphone line

- Dino: If we move RFC1112 and hence IGMPv1 to historic:
  - IGMPv2/IGMPv3 include IGMPv1 backward compatibility.
  - What to do about that, changing all existing IGMPv2/IGMPv3 host/router stacks
- Toerless answer in mike line: No change of any existing/future IGMPv2/v3 implementations desired. Current/forward-going protocols can perfectly have backward compatibility with a historic/older version.

- But needed to figure out how to make this clear in text.

Changes from -01 to -02

- Specifies that this doc superseeds RFC112
  for all content except Appendix A (IGMPv1)
  - Allow new and keep all existing references to RFC1112, for purpose of IGMPv1 specification
  - This is used by IGMPv2/IGMPv3/IGMPv3lite RFCs: All have IGMPv1 backward compatibility. No change to this functionality
- Any references for specification of “IP Multicast” are now for this doc instead of RFC1112
  - Sending / receiving IP Multicast packets, MAC-layer multicast address mapping, app-socket recommendations (joining), triggering of IGMP/MLD (refers to IGMPv3/MLDv2).

-01 (IETF116) - -02

- pre5378Trust200902 template text block
  - Because this text in its majority preceeds rules from 2008 (standard we use now).
- Named references, e.g. [IGMPv3] instead of [RFC3376]
- Added reinforcing sentence for packets with multicast source addresses to NOT BE valid IP packets.
- New/modified section (for issues described):
  8. Normative Changes
  8.1. Moving RFC1112 and IGMPv1 to historic status
  8.2 Backward compatibility with IGMPv1
- Moved appendix text to section 9 (same as other similar RFCs i looked at) – no text change
  9. Changes from RFC1112
  9.1. Normative language
  9.2. Superseeding references to IGMPv1
  9.3. Introduction of the term Any-Source Multicast (ASM)
  9.4. Applicability to both IP and IPv6
  9.5. Standard for IP multicasting in controlled networks

Other remaining text issues ?

No issues left ?

Want to do one more round, and remove explanatory appendix text. New section 8 and section 9 should suffice.

New (IMHO) interesting process issue

- RFC1112 is part of Internet Standard 5 (STD 5) “Internet Protocol”:

  0005 Internet Protocol. J. Postel. September 1981. (Format: TXT=241903 HTML= bytes) (Also RFC0791, RFC0792, RFC0919, RFC0922, RFC0950, RFC1112)

- RFC1112bis would replace RFC1112 in STD5
  - Changes all safe to do this. May require making separate statements to IESG (if not small draft/RFC) about ubiquitous support of updated dependencies, e.g.: IGMPv3. (should be obvious – *fail on finding any relevant OS/system now that does NOT support it*)
- But RFC1112bis also includes IPv6
  - Showing ubiquitous support for IPv6 Multicast including references (MLDv2) also not an issue.
- But (issue): What about STD86 “Internet Protocol, Version 6”
  - Should logically become part of STD86
  - But no history of STD86 including any other “extensions” – it only includes RFC8200
  - Not sure if there would also be other RFCs applicable for this status
  - Nobody cared for a more “inclusive” STD86 ? Or maybe there are no other RFCs applicable ?

The End

- Adoption Call ?
- Questions ?