draft-ietf-pim-eckert-rfc1112bis-06

PIM-WG, IETF123 Madrid

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Status update (1)

- -03 @ IETF122 meant to fix all open issues (famous last words)
- Except for the removal of „permanently join 224.0.0.1“ (issue raised by Stig)

RFC1122 Requirements for Internet Hosts

- So far, RFC1122bis did not have a requirement to support IPv4
  - Like rfc1112 just lists the three support levels 0 (not), 1 (send only), 2 (send/receive)

- But RFC1122 says in 3.3.7
- *A host SHOULD support local IP multicasting on all connected networks for which a mapping from Class D IP addresses to*
- *link-layer addresses has been specified (see below). Support*
- *for local IP multicasting includes sending multicast datagrams,*
- *joining multicast groups and receiving multicast datagrams, and*
- *leaving multicast groups. This implies support for all of*
- *[IP:4] except the IGMP protocol itself, which is OPTIONAL.*

- Translation: All hosts SHOULD support IP Multicast, MAY support IGMP
  - But RFC1112 does not even specify IP Multicast reception without IGMP
  - But in practice, link-local IP multicast was always done without IGMP (hence no use of IGMP for link-local scope groups in IGMPv3 spec)
  - And RFC1112bis did already explain a lot of this history – but more like a pragmatic piece, not as „blessed requirement“

RFC1122 – Requirements for Internet Hosts

- Including RFC1122 into RFC1112bis:
- Add definition of „Level 2L“ (link local)
  - All of Level 2 – but no use of IGMP.
  - SHOULD only be used for link-local groups ?! (RFC1122 does not say this)
- Add overall requirement:
  - All IPv4 hosts SHOULD support Level 2
    - Upgrades IGMP from MAY to SHOULD for all hosts – given how it‘s full standard
  - If they can not support Level 2, they SHOULD support Level 2L
  - Q: Should we go higher with the „all hosts“ requirements ?
    - AFAIK there is no mandatory protocol that requirement multicast in IPv4
- Declare this document as an Update to RFC1122
  - Because it updates the IGMP MAY to a SHOULD – explained in new section 9.4
  - We can always have IESG negotiate this away if they don‘t like it. But makes sense to me.
- Added explanatory sections for these RFC1122 related changes:
  - 10.7 for Level2L
  - 10.8 for adding the requirement to support IP multicast (for IPv4)

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Other changes

- Stigs ask: fixed by radding:
  - *Level 2/2L hosts and gateways SHOULD permanently join to the Link-Local all-hosts group for the version of IP they implement. See Section 10.10.*
  - *Did really think long about this, looked into linux kernel etc.*
  - *Section 10.10 tries to find good explanation for this, but the only reasoning why this is useful is avoidance of implementation of dynamic join API for kernel use of link-local scope.*
  - *Justification now: „We‘ve always done it this way, everybody (kernel) still does it – no significant benefit in changing it“.*

- Added notion of „host side of „ IGMP in explanations
- Added reference text to RFC5771 (address allocation IPv6 multicast)

IPv6

- This was -04
- Then Brian Haberman noted that RFC4291 (IPv6 Node requirements) effectively means that Nodes MUST support IPv6 multicast – for a range of link-local multicast groups
- Translated into according requirement in RFC1112bis:
  - SHOULD support Level 2 for IPv6
  - MUST support Level 2l if it can not support Level 2 for IPv6

- Note: This does introduce an official recognition of Level 2L for IPv6 which we previously avoided
  - I am unsure if there are still IPv6 implementations of IPv6 that do also run without MLD
  - I think early routers will have done this in support of SLAAC etc..
  - So i think this is fine and reflects reality
  - Admittedly i just didn‘t work that much with old IPv6 stack – Stig to the rescue ????!

The End

ITS PERFECT ;-))

Please let this be the end of RFC1112bis in PIM –

Move on to IETF/IESG review ?!!!!

Thanks a lot everybody – especially Brian!