

# Reliable Router Solicitations

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# What happens today?

- Hosts send Router Solicitations on interface initialization
  - a host transmits up to MAX\_RTR\_SOLICITATIONS (defined to be 3) Router Solicitation messages
  - the RSs are separated by at least RTR\_SOLICITATION\_INTERVAL (defined to be 4 seconds)
- If there are no RAs received having waited MAX\_RTR\_SOLICITATION\_DELAY (1 second) after sending the last RS
  - the host concludes that there are no routers on the link

# What' s wrong?

- These initial RSs can be lost
  - There can be multiple L2 segments between the host and the Router
    - The host facing segment may come up before the router facing segment(s). i.e. No connectivity from host to router
- The hosts need to retransmit the RSs for reliability

# Scenarios

- NBMA links
  - No periodic multicast Ras
  - RSs are needed to trigger the Ras
- Multicast links
  - Host will “heal” after receiving a multicast RA but there may be a significant delay in some networks

# How to retransmit?

- To achieve resiliency to packet loss the host needs to continue retransmitting RSs until
  - a) it receives a Router Advertisement, (or)
  - b) until it is willing to accept that no routers exist on the link
- The retransmission algorithm needs to use some form of exponential backoff in order to keep RS related traffic at acceptable levels

# Algorithm

- The RSs MUST use the retransmission algorithm specified in Section 14 on RFC3315 for retransmitting DHCPv6 SOLICITs
  - Tried and tested algorithm
  - Possibility for better code reuse
- The following variables are used as input to the algorithm
  - IRT: 4 seconds
  - MRT: 3600 seconds
  - MRC: 0
  - MRD: 0

# Open Issues

- The host will continue retransmitting RSs (1/hour) on non-IPv6 links
- We do not know how to differentiate links with no IPv6 routers present currently and links where IPv6 will never be enabled
- Is this acceptable?

# Next steps

- Any questions/comments?
- The authors would like to request adoption of the draft by the WG